

P-447

## NASA Technical Memorandum 86426, Part 2

# 1983 DIRECT STRIKE LIGHTNING DATA

(NASA-TM-86426-Pt-2) THE 1983 DIRECT STRIKE  
LIGHTNING DATA, PART 2 (NASA) 447 p

N88-29260

CSCL 04B

Unclass

H1/47 0164882

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National Aeronautics and  
Space Administration

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Hampton, Virginia 23665



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### Part 2

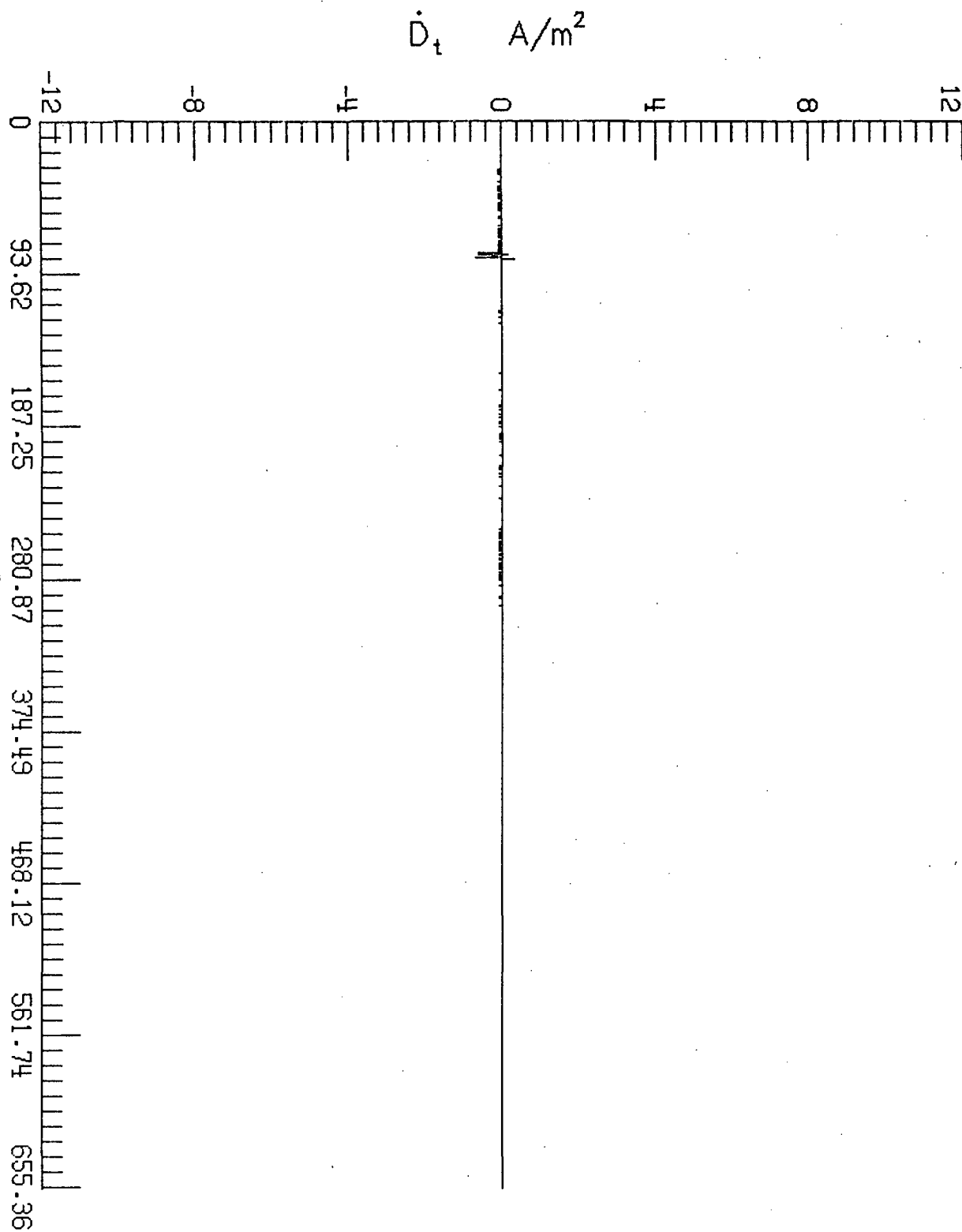
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### Part 3\*

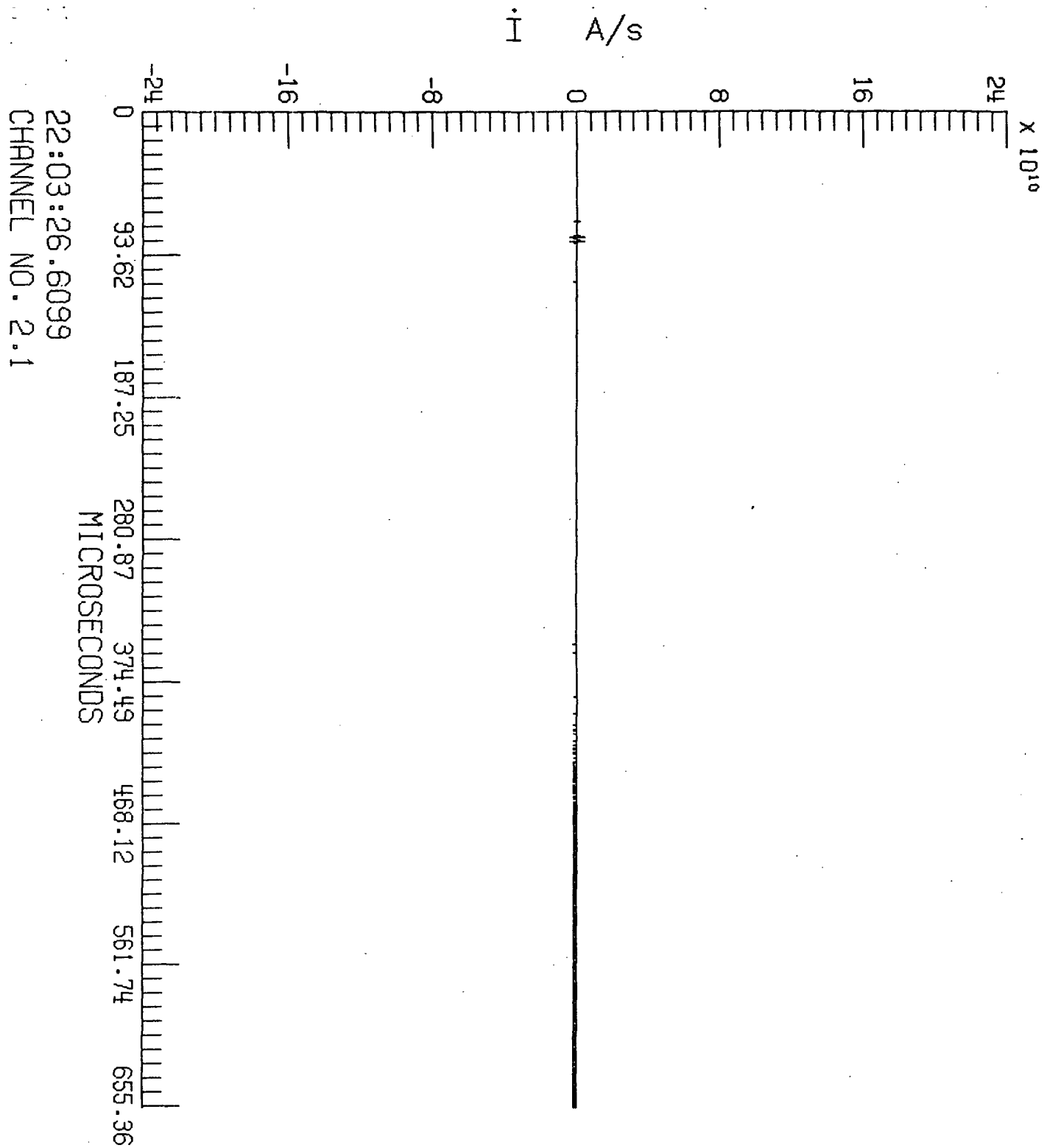
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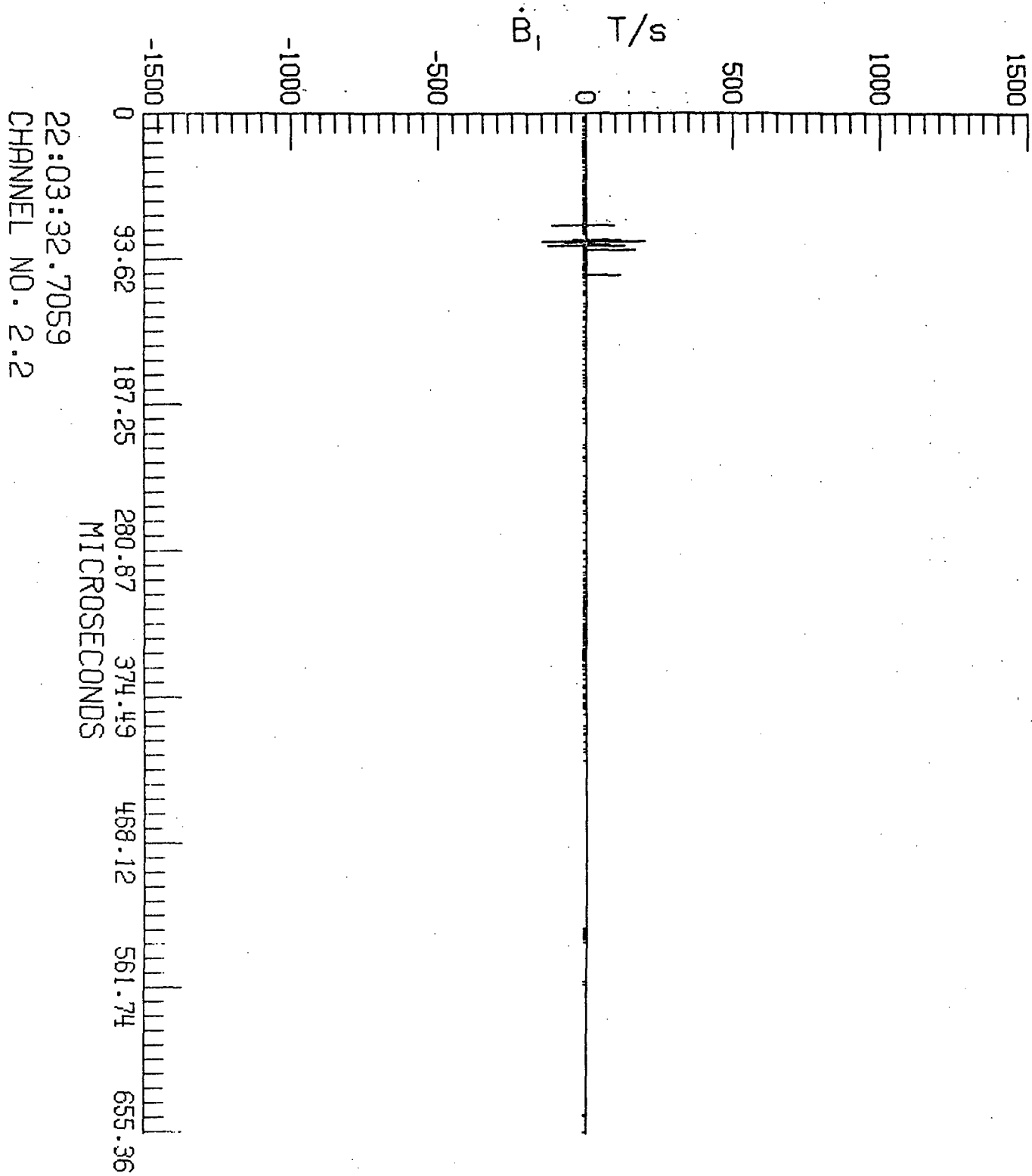
\* Part 1 and Part 3 published under separate cover.



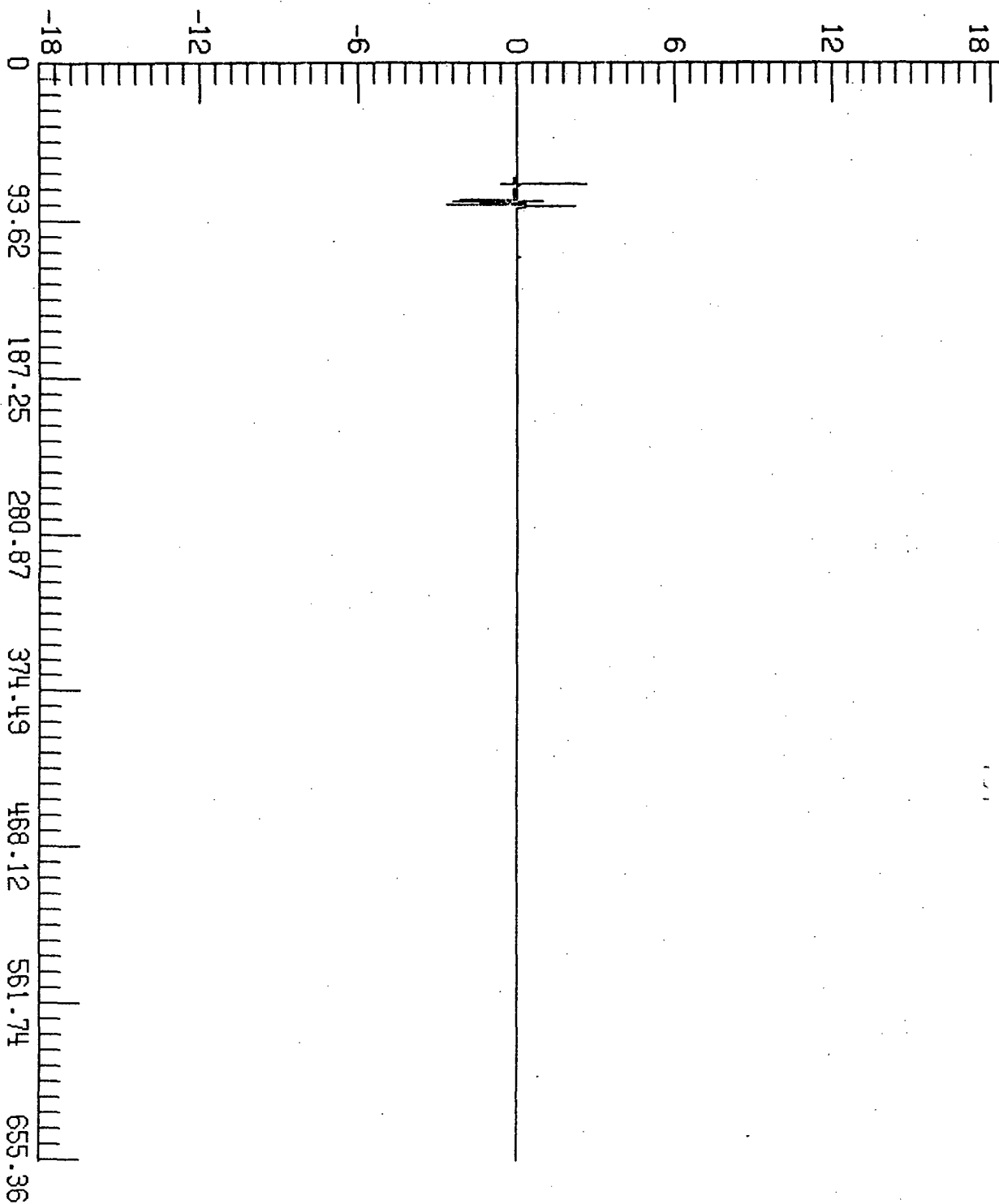


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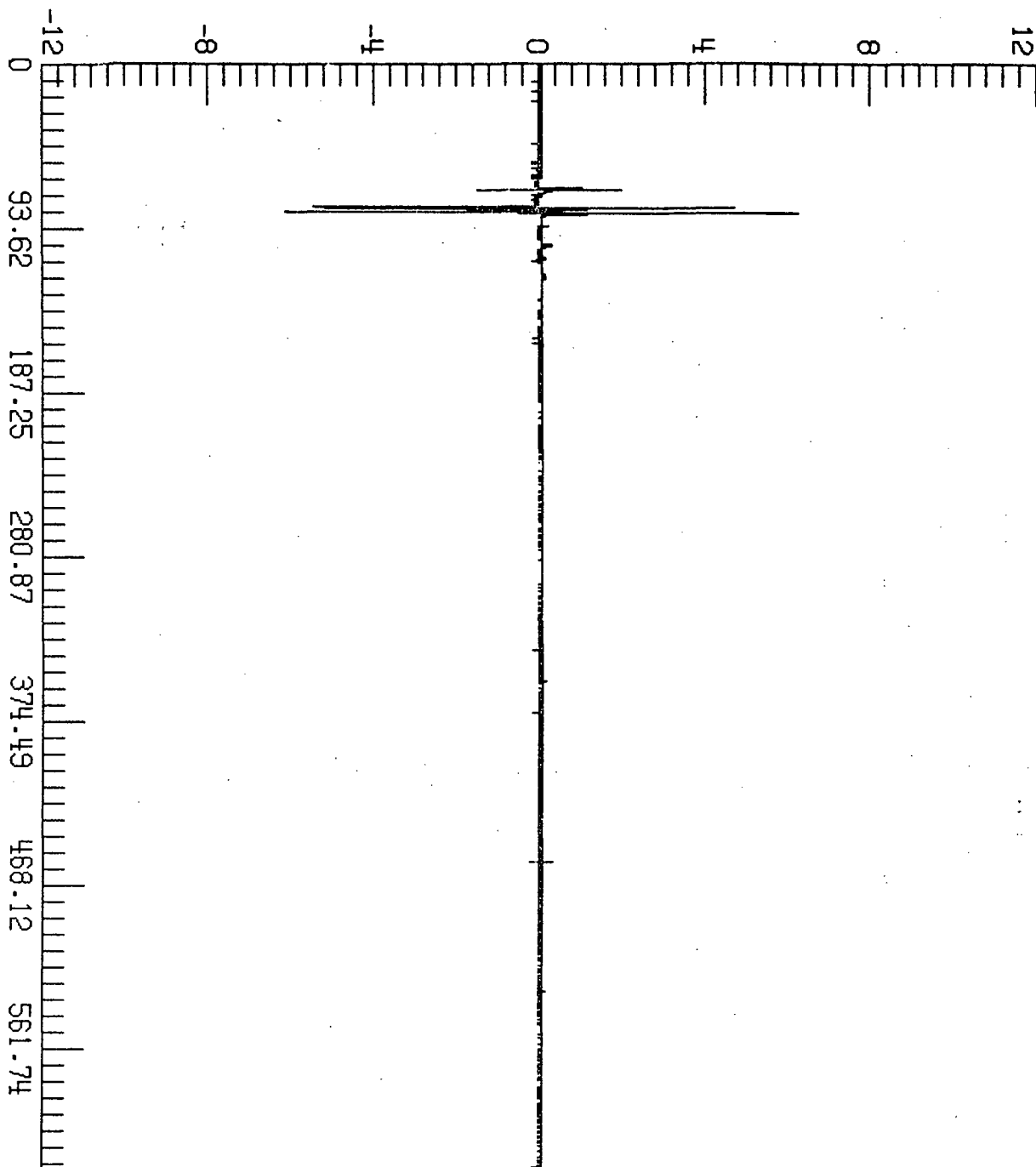


$\dot{D}_{wl}$  A/m<sup>2</sup>



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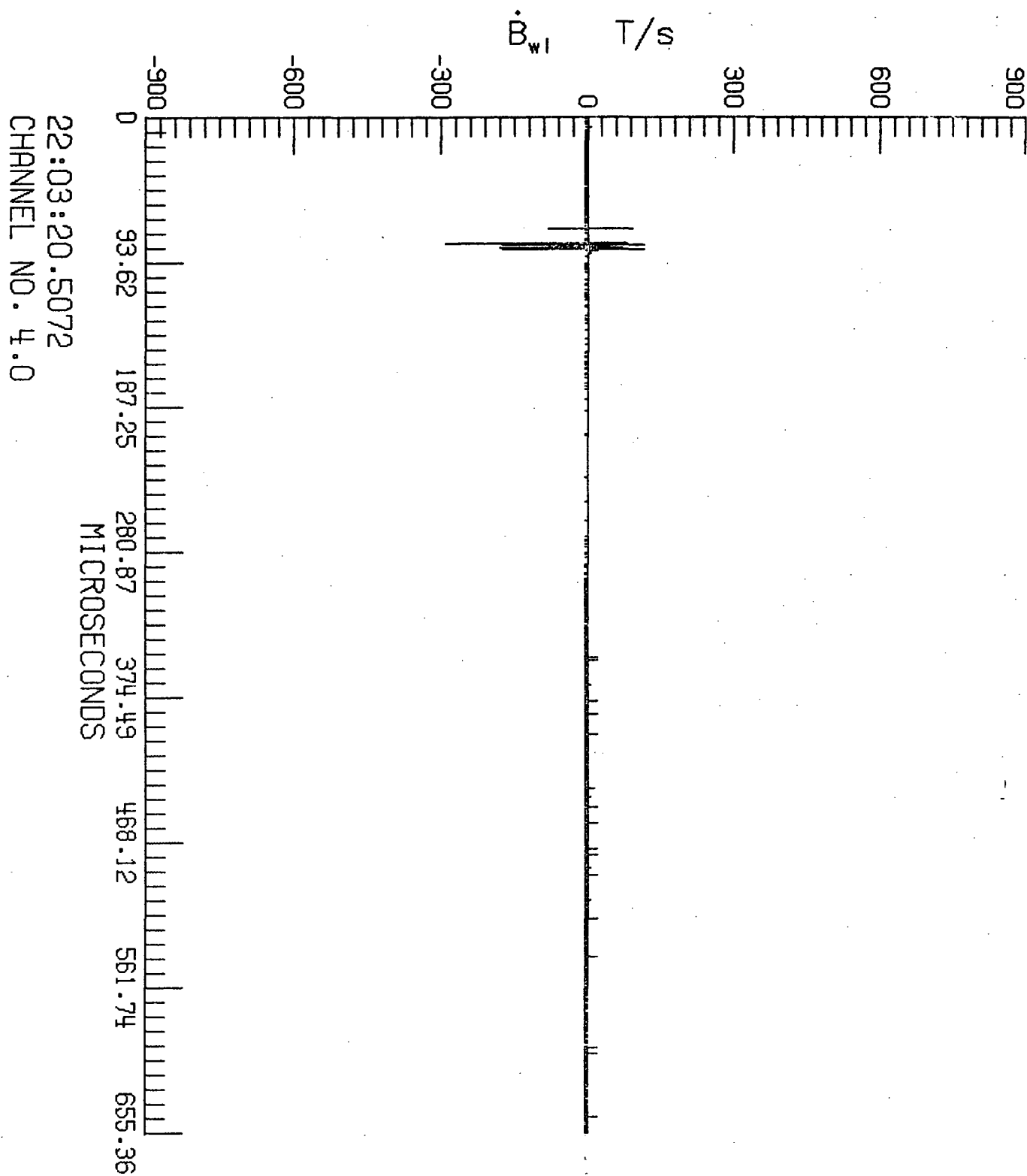


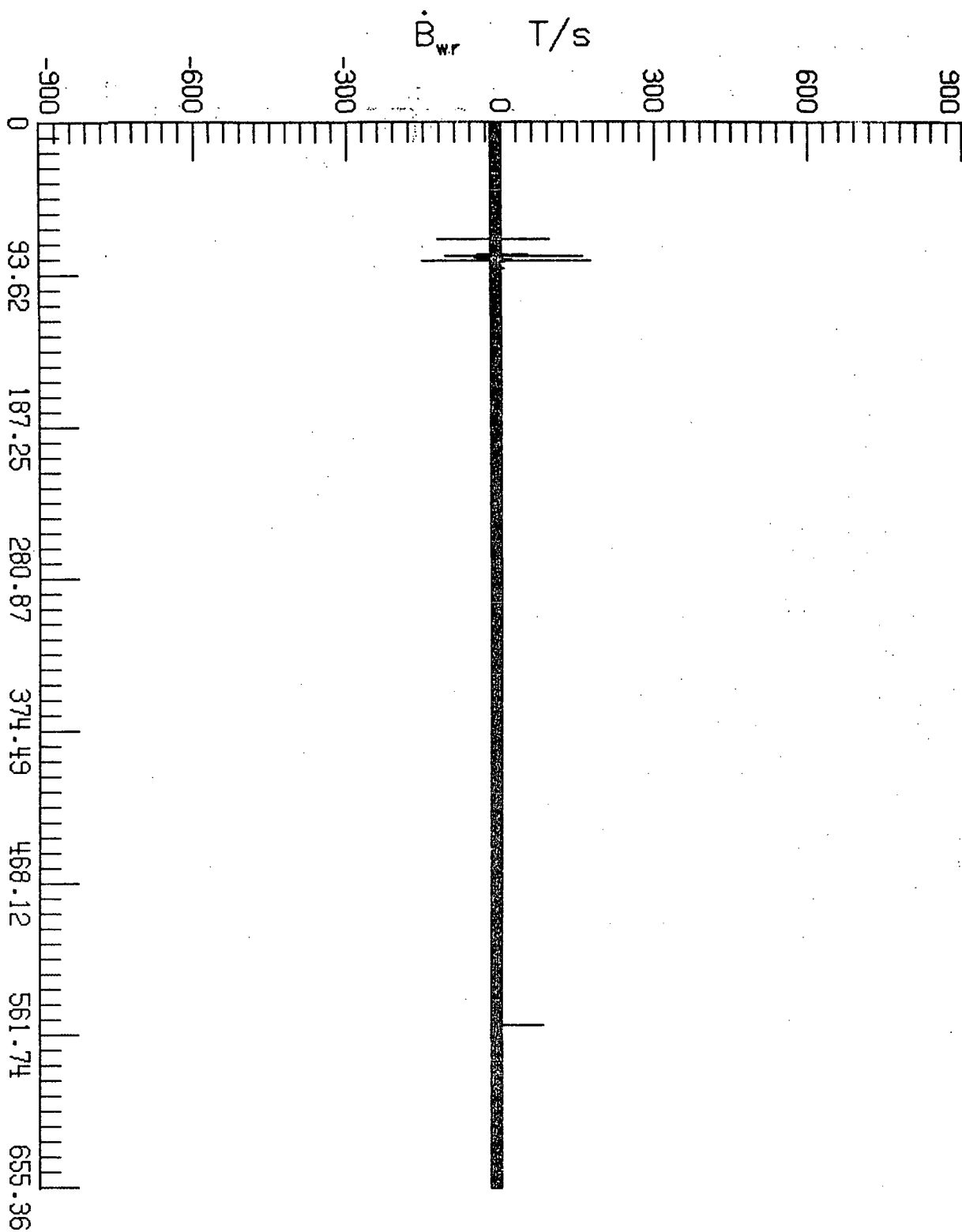
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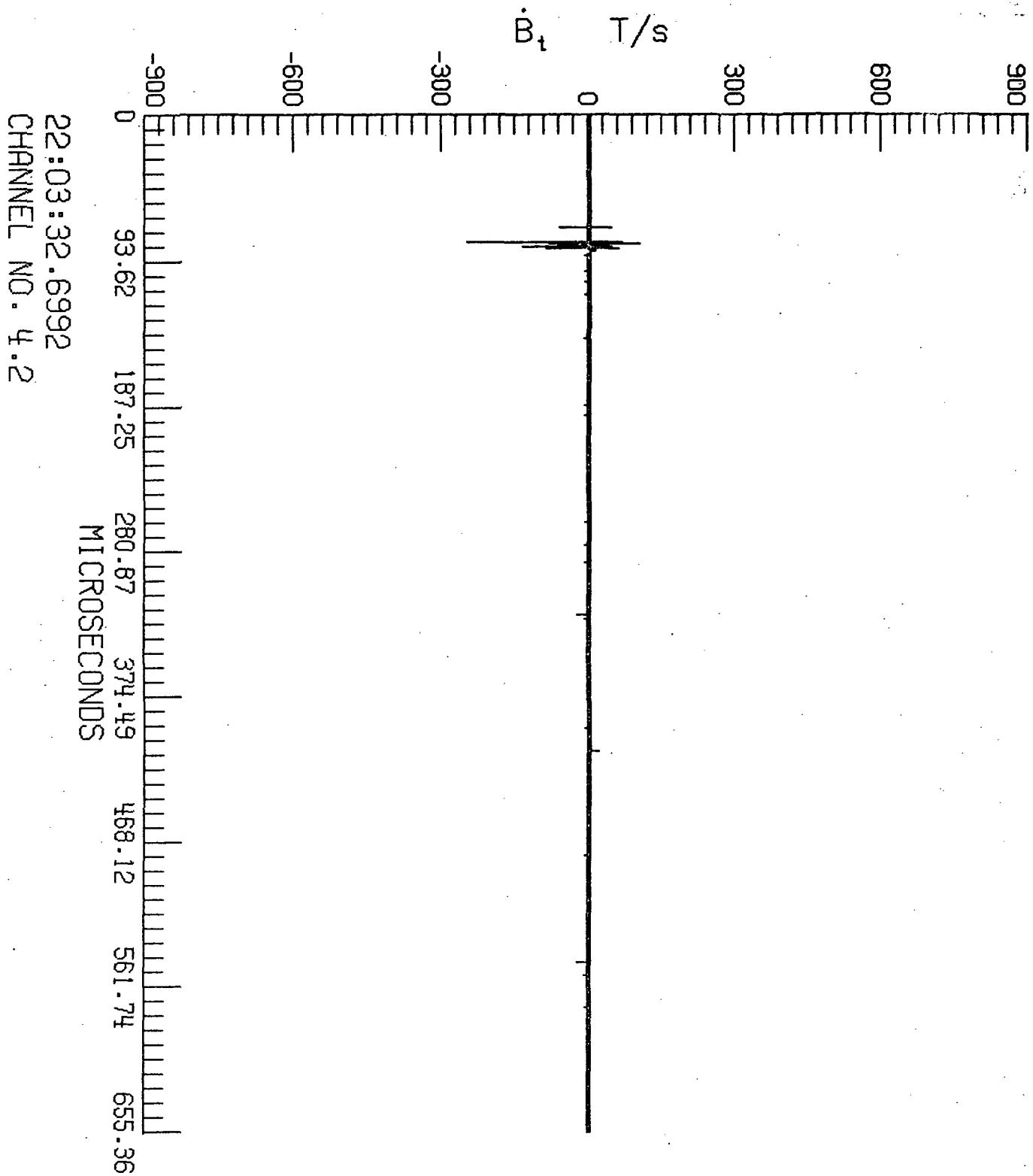
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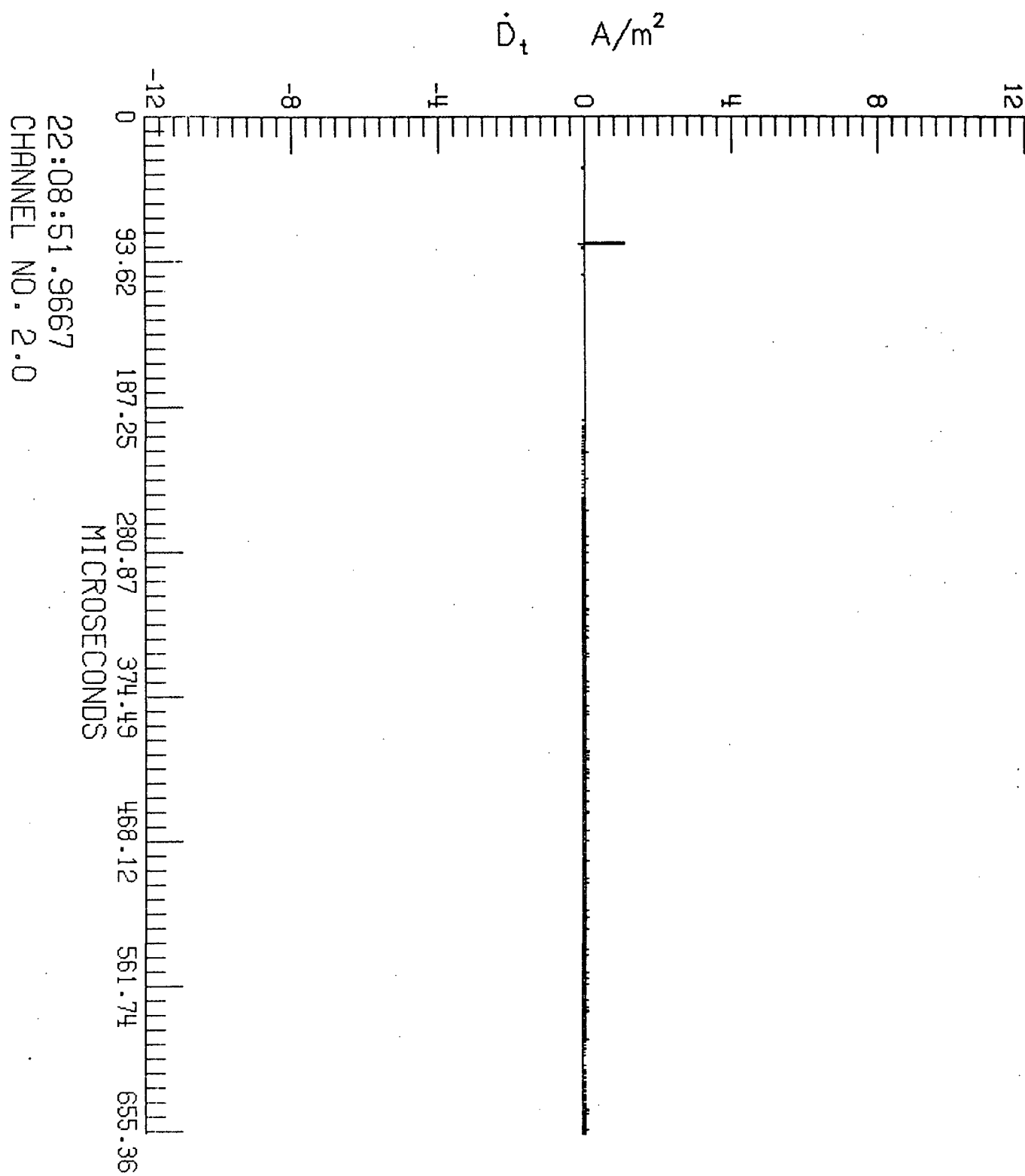
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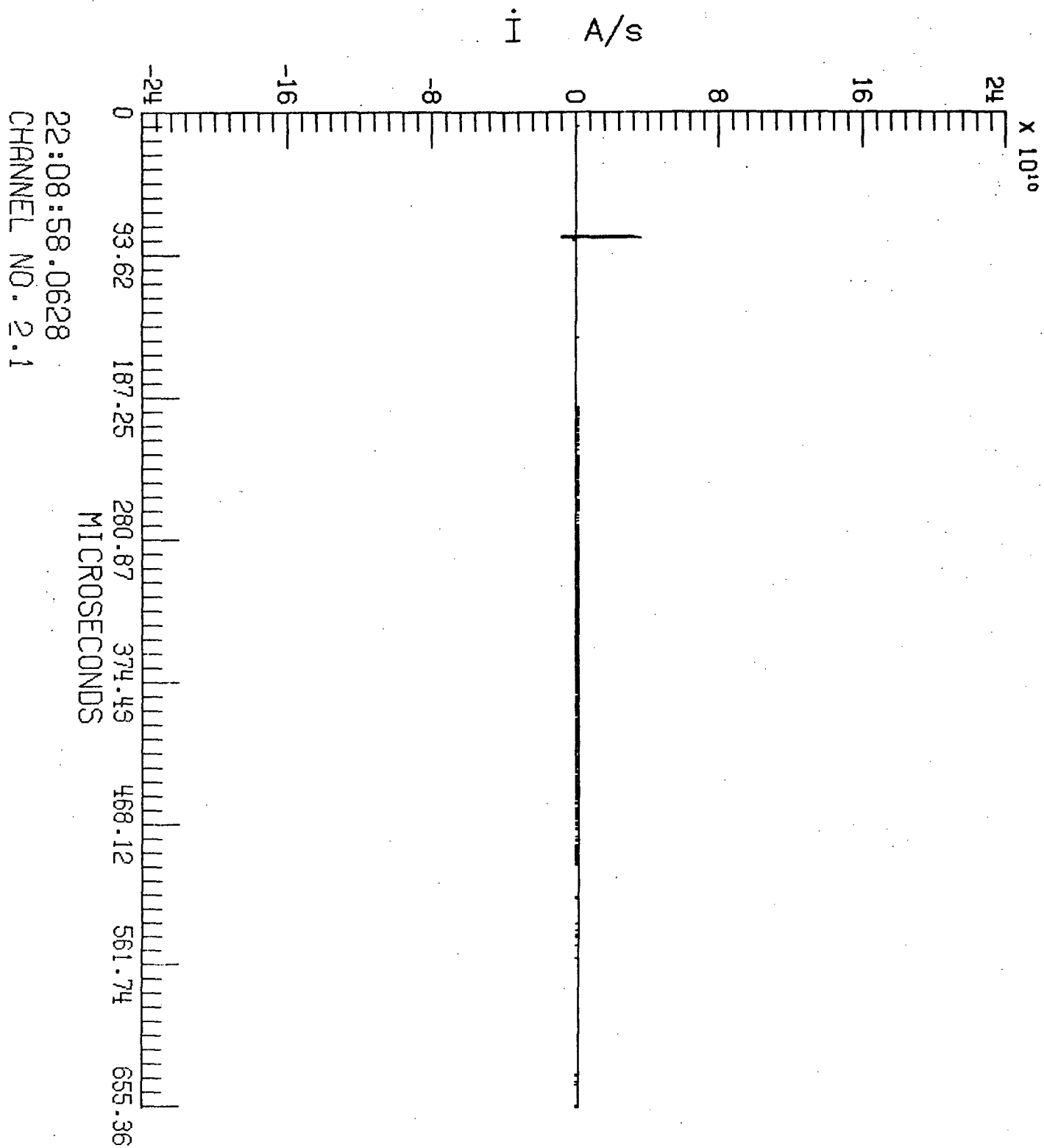


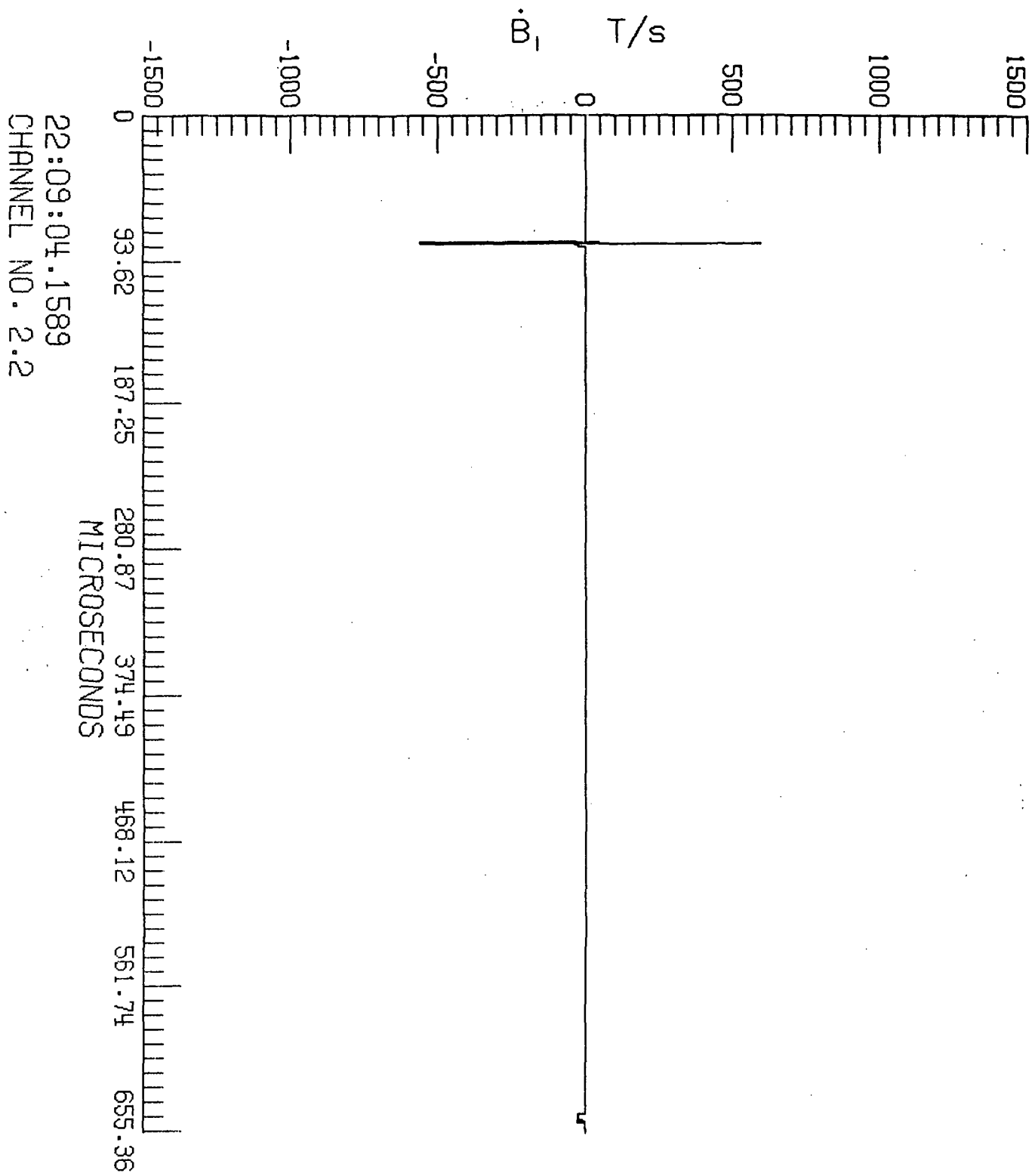


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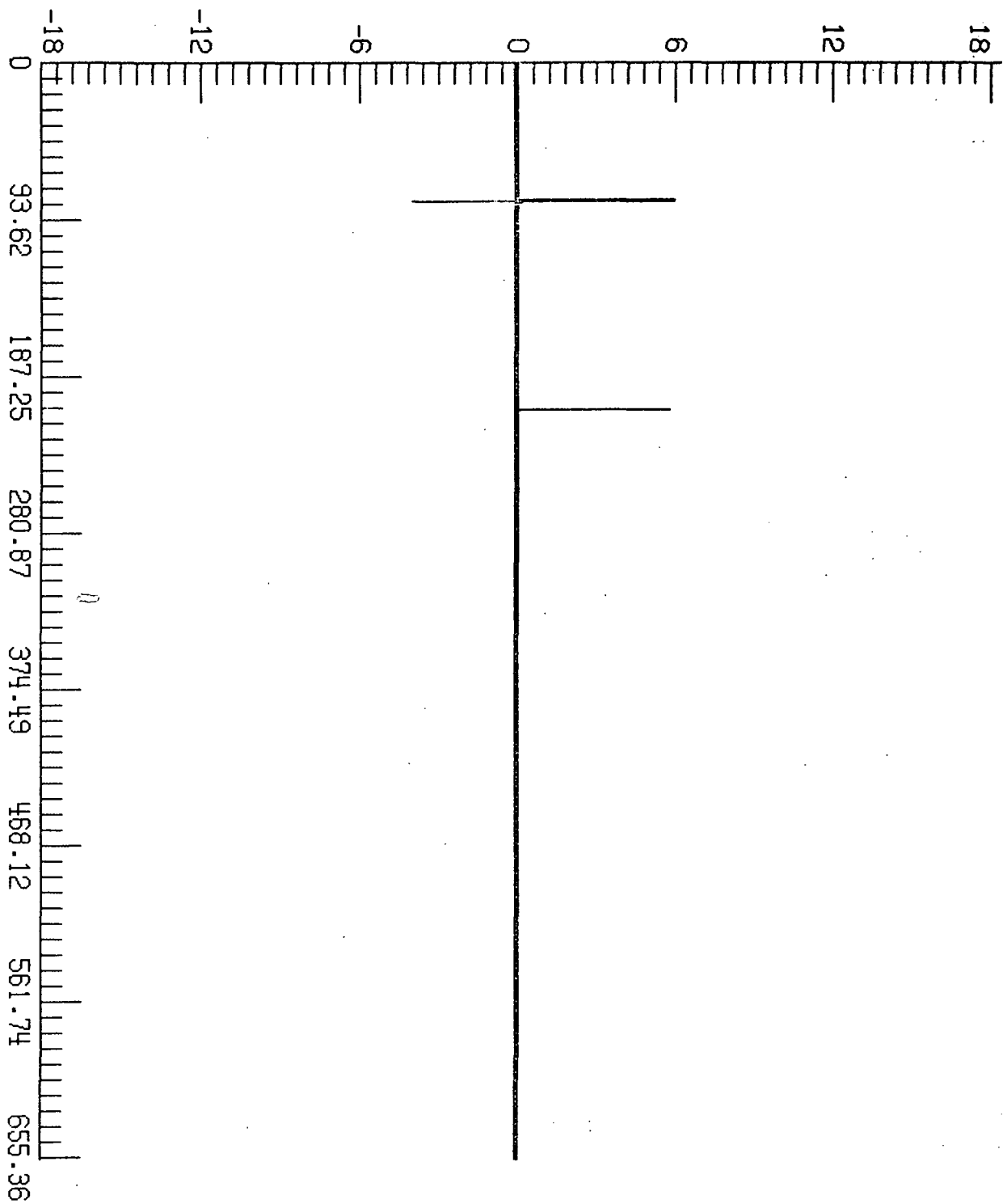
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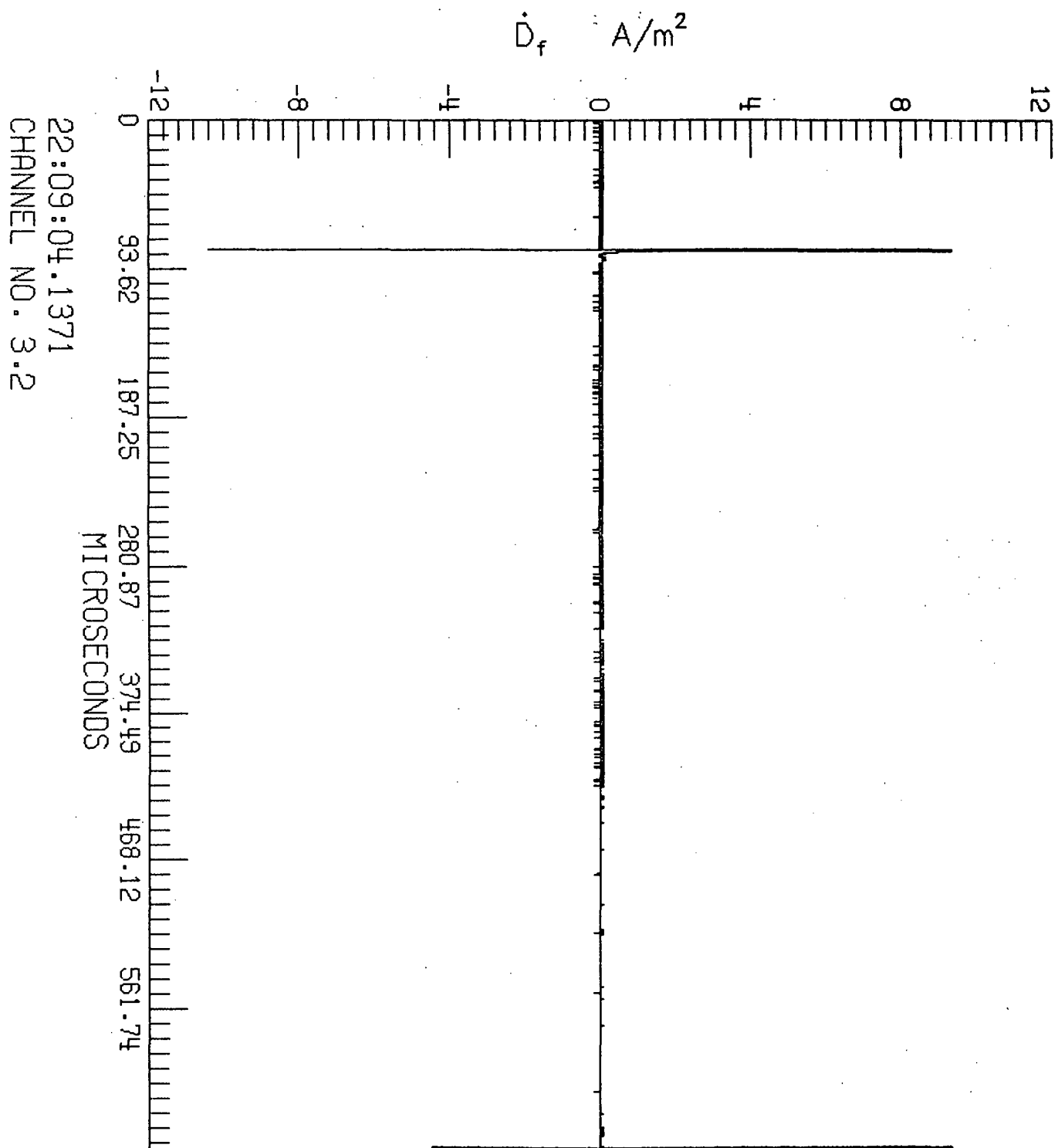


$\dot{D}_{w1}$   $A/m^2$



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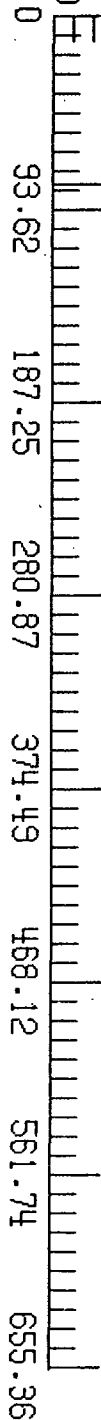
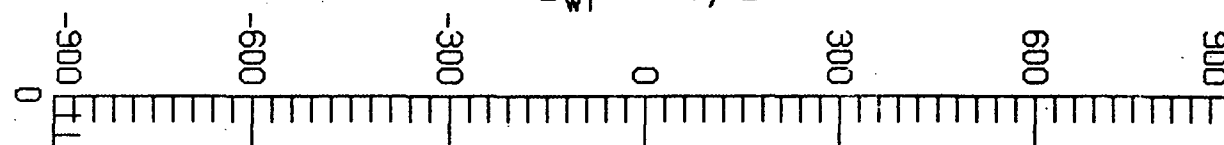
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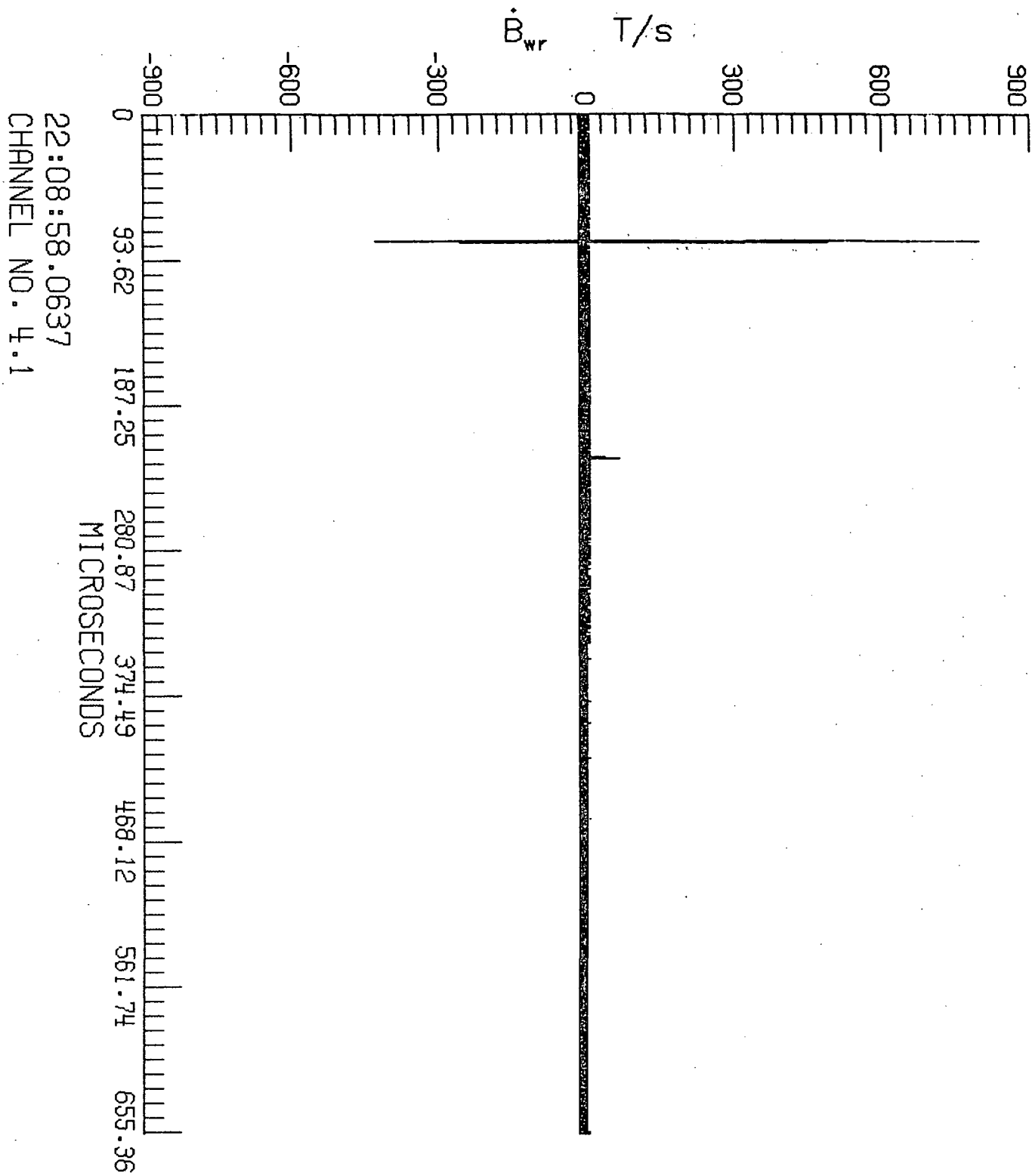
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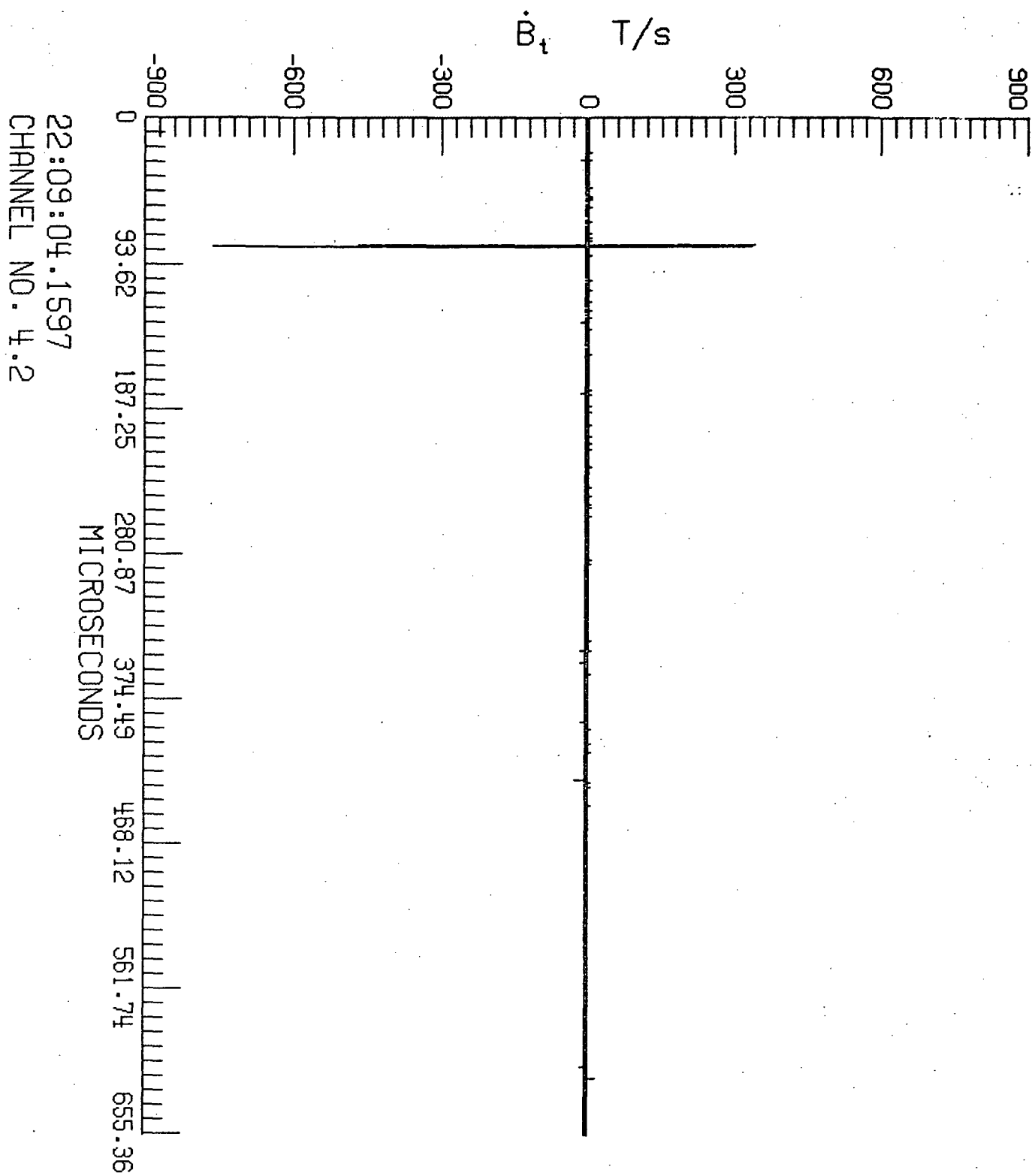


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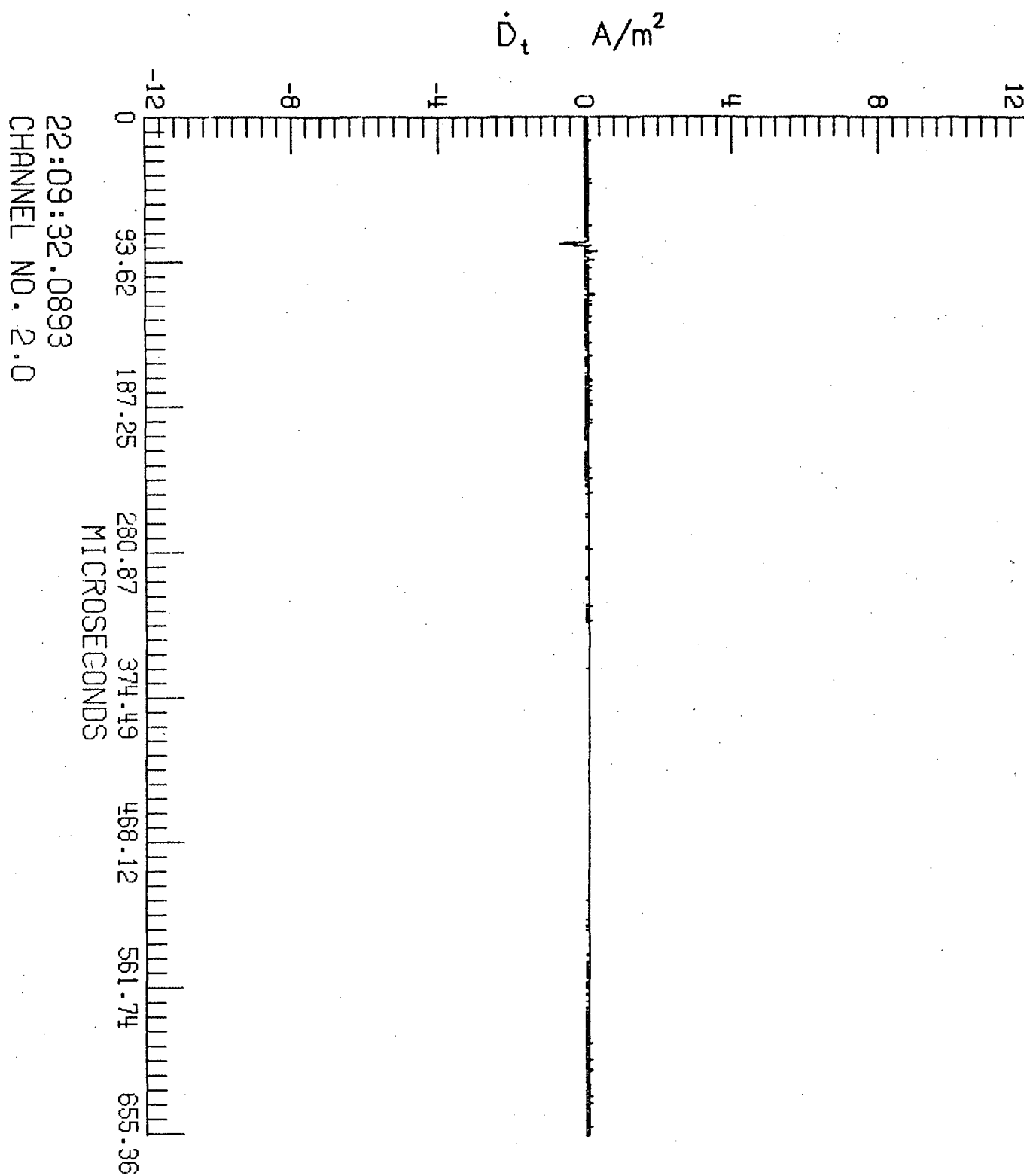


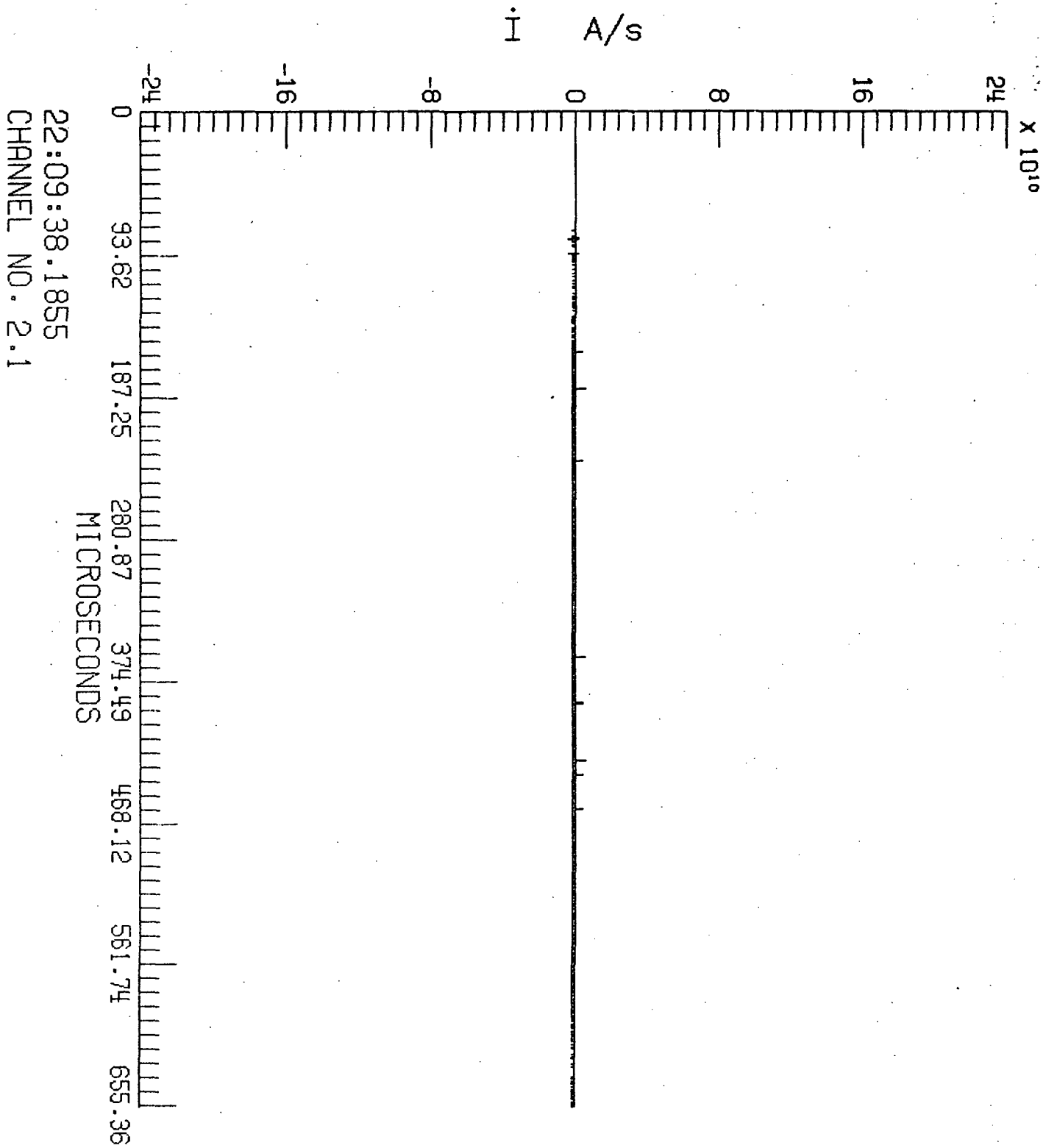


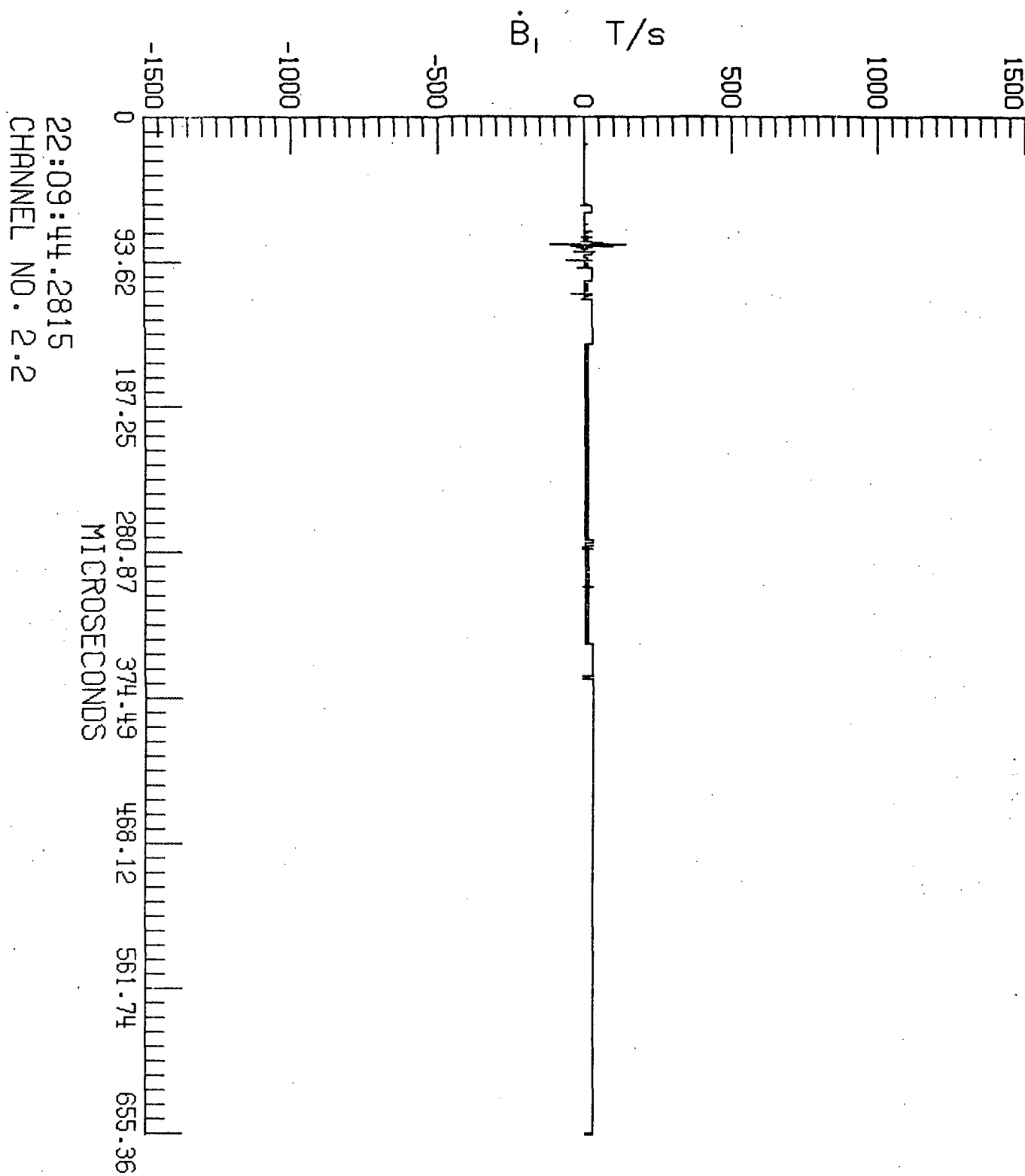


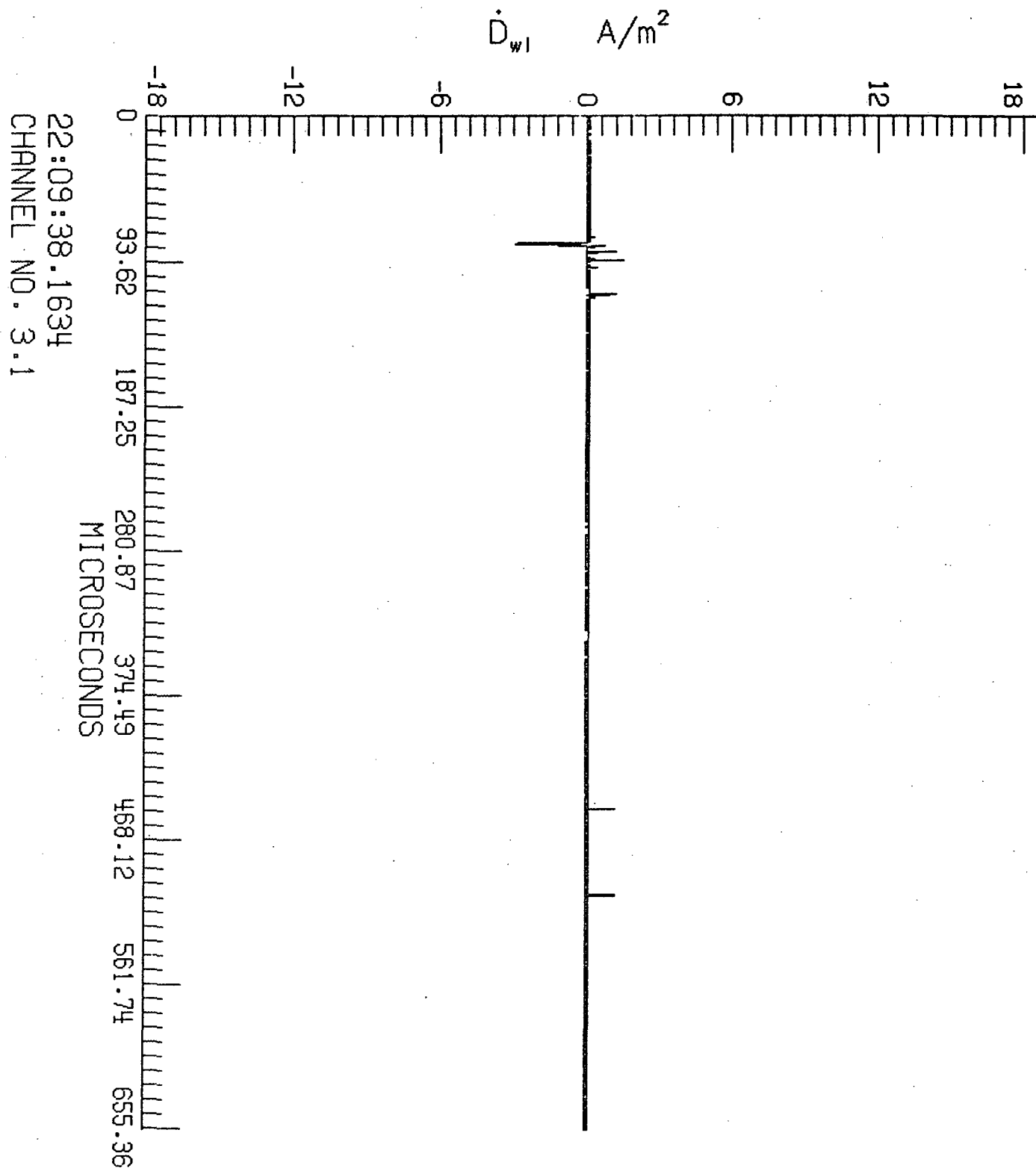
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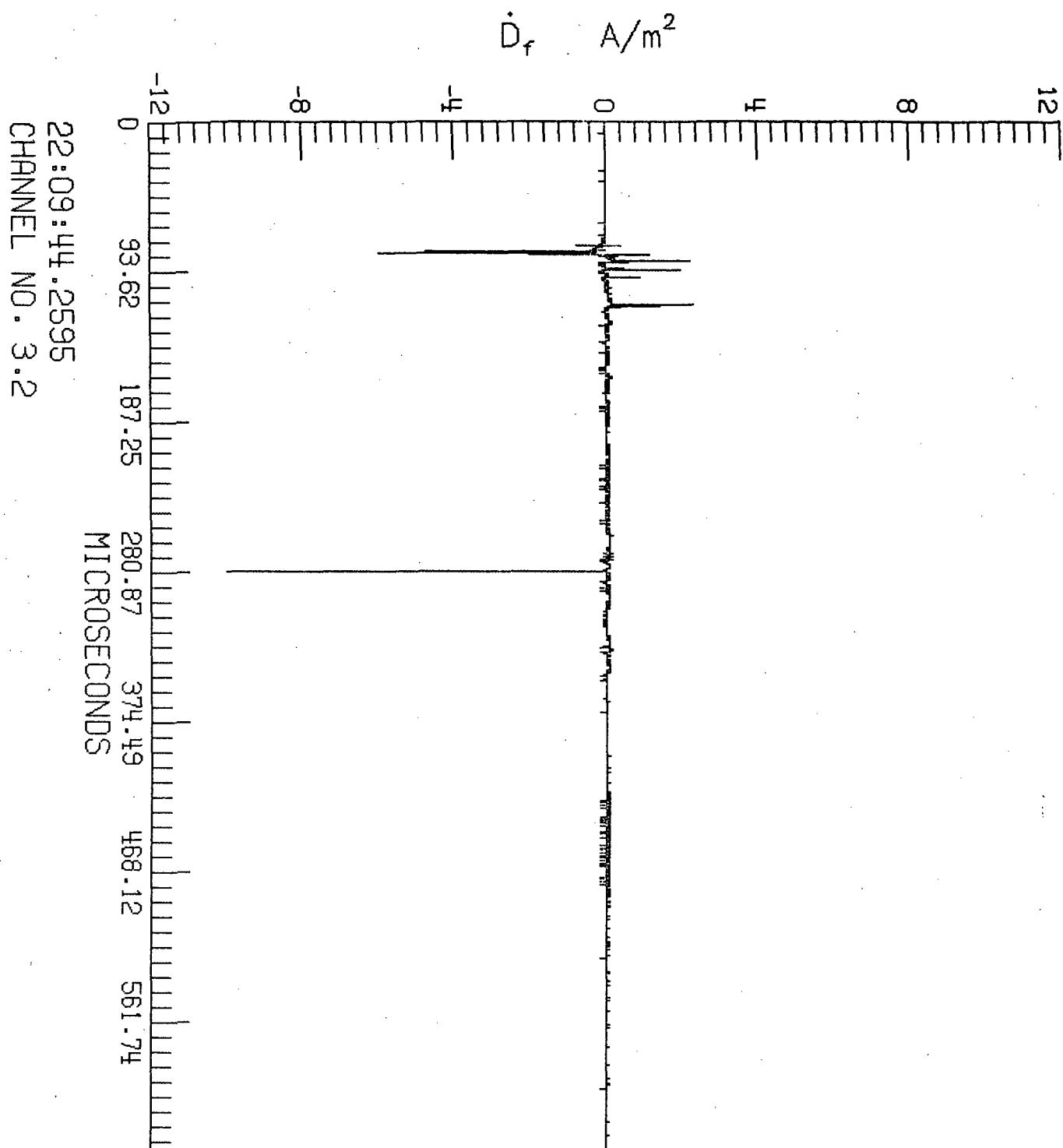
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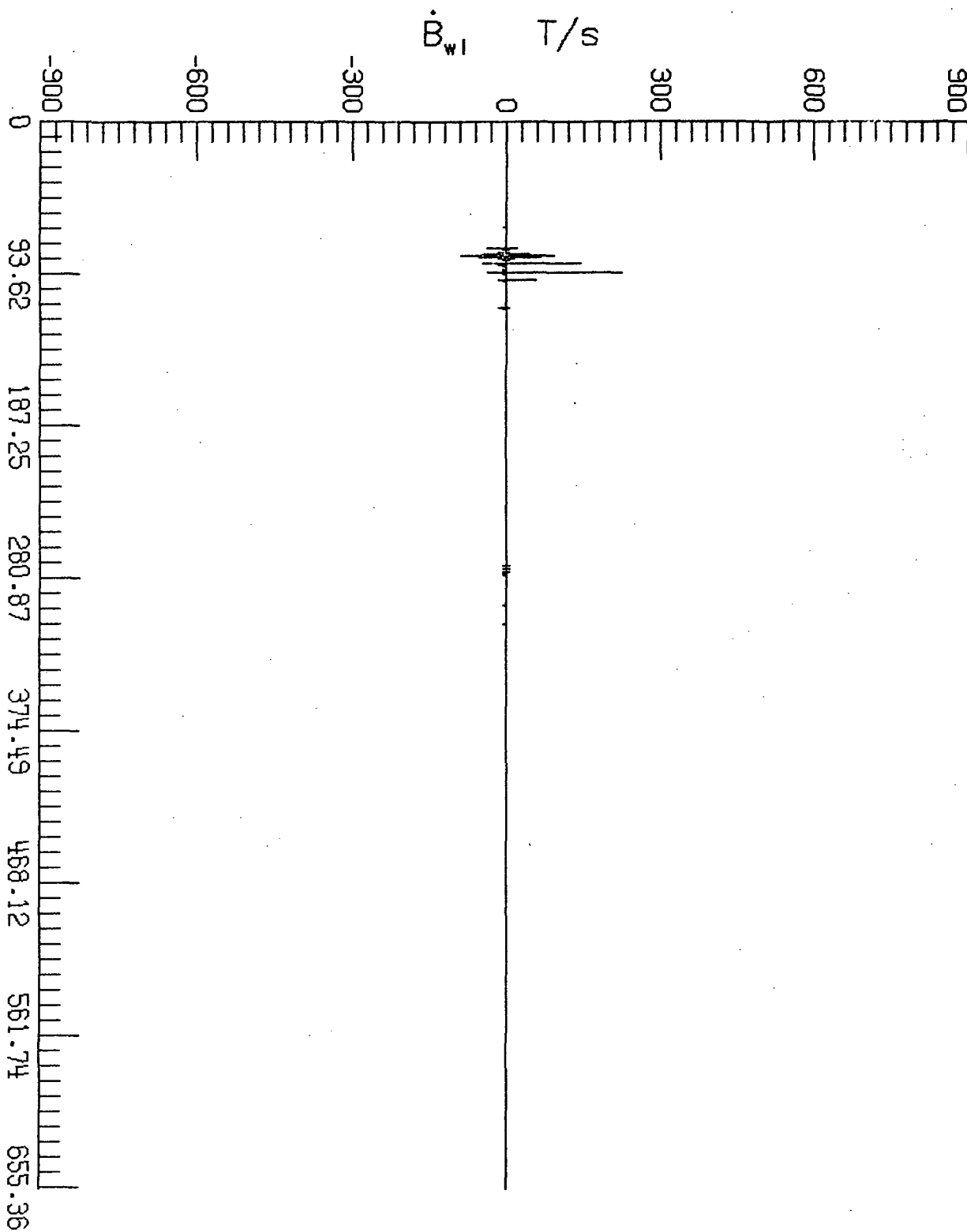




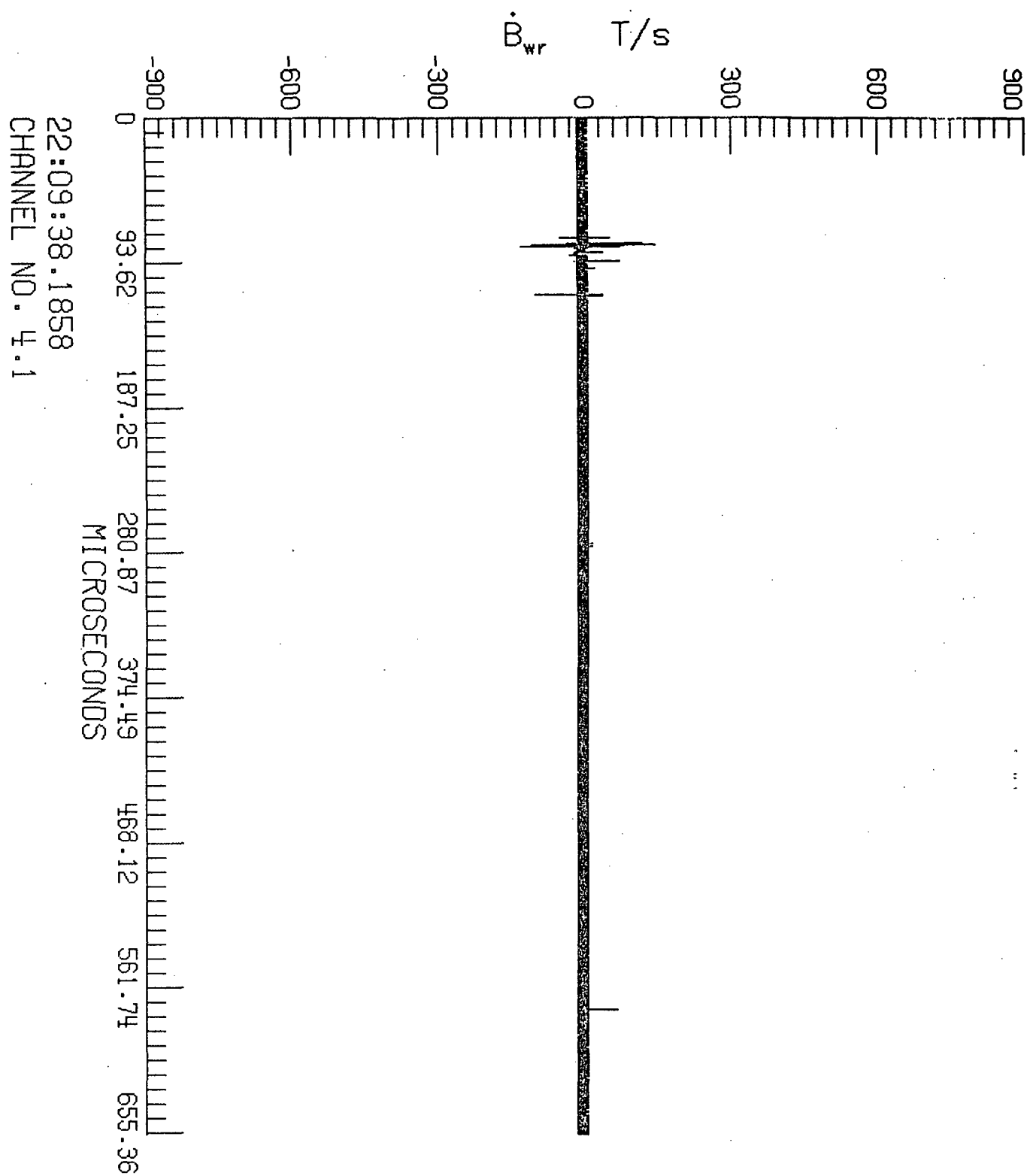


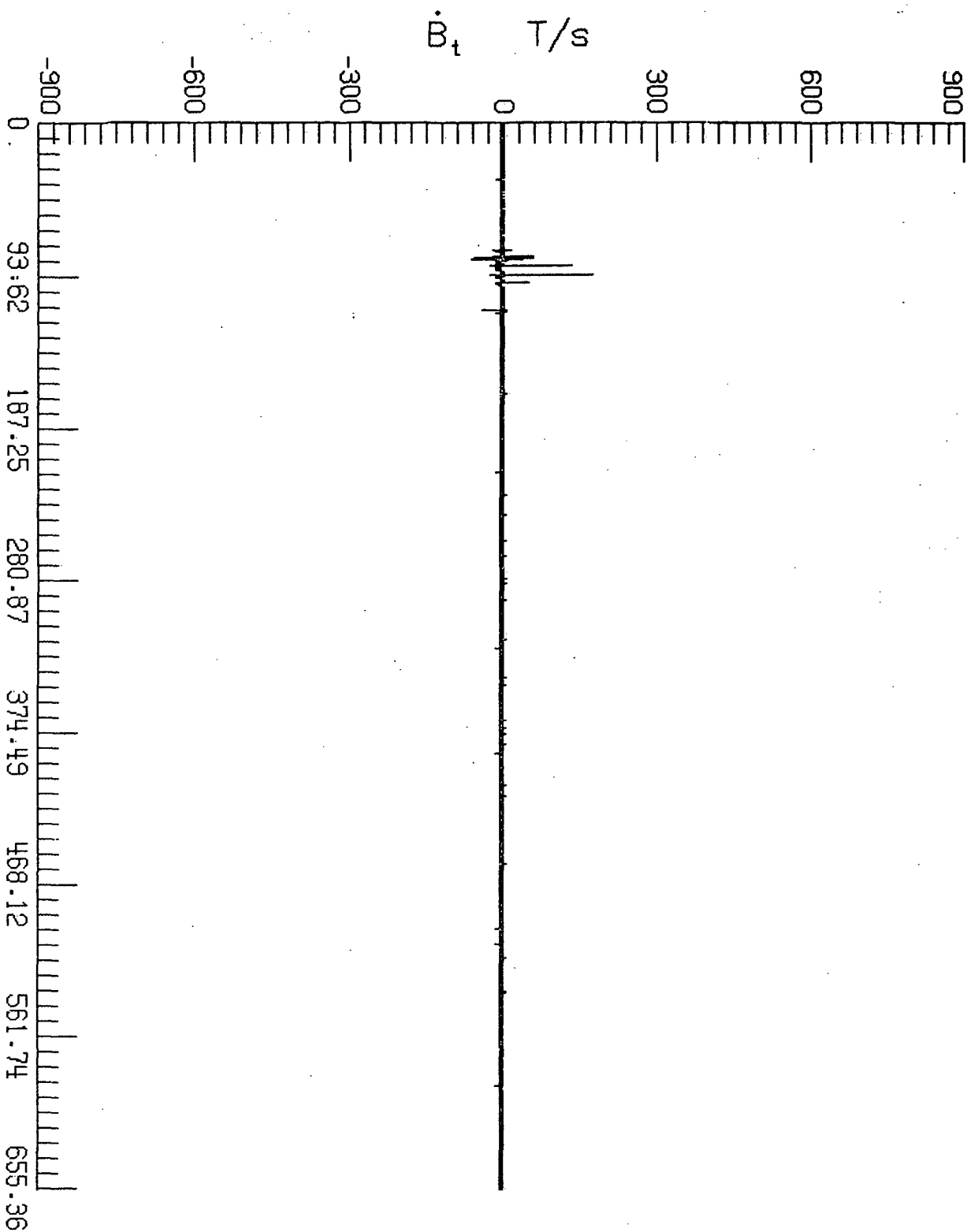
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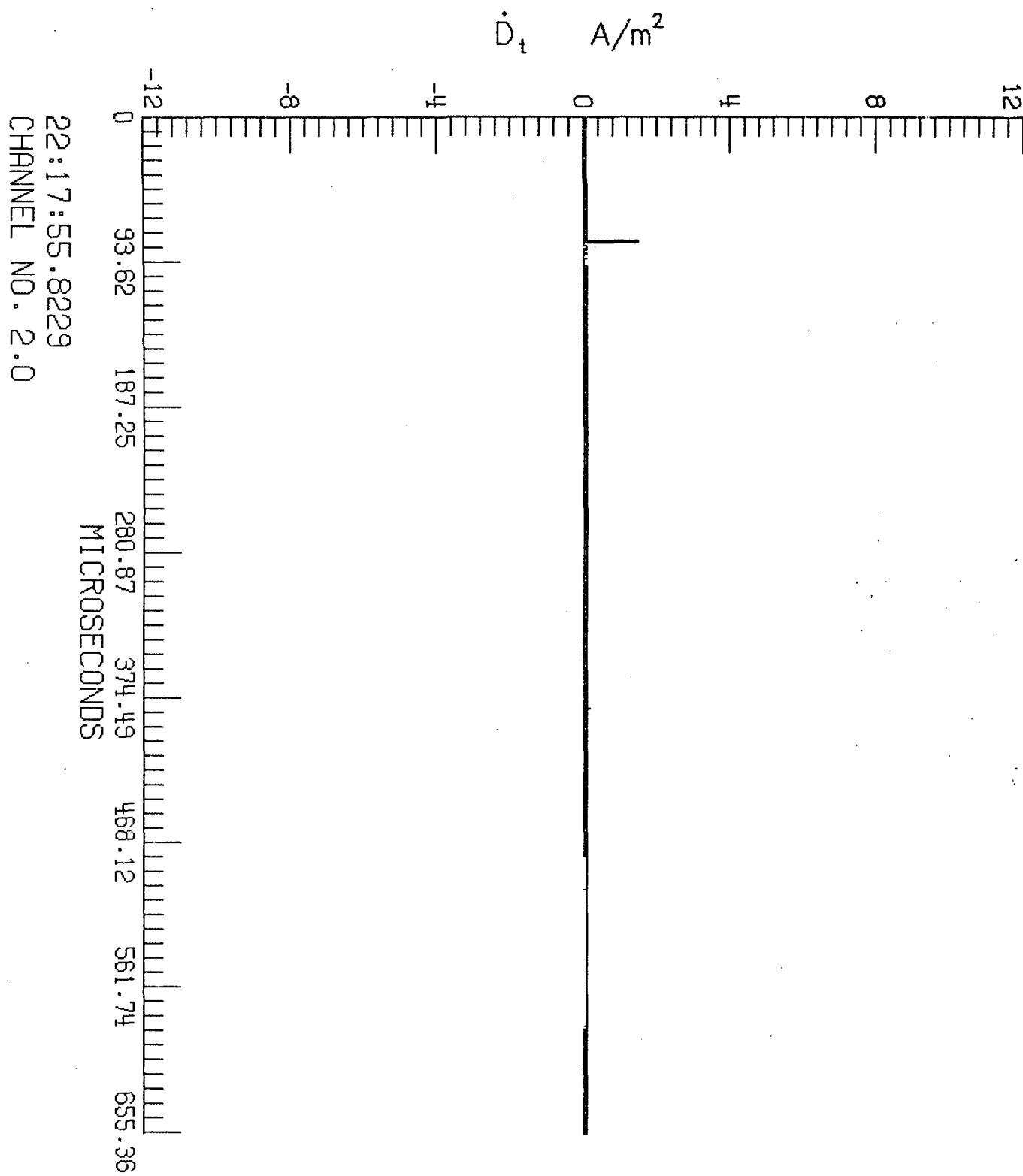
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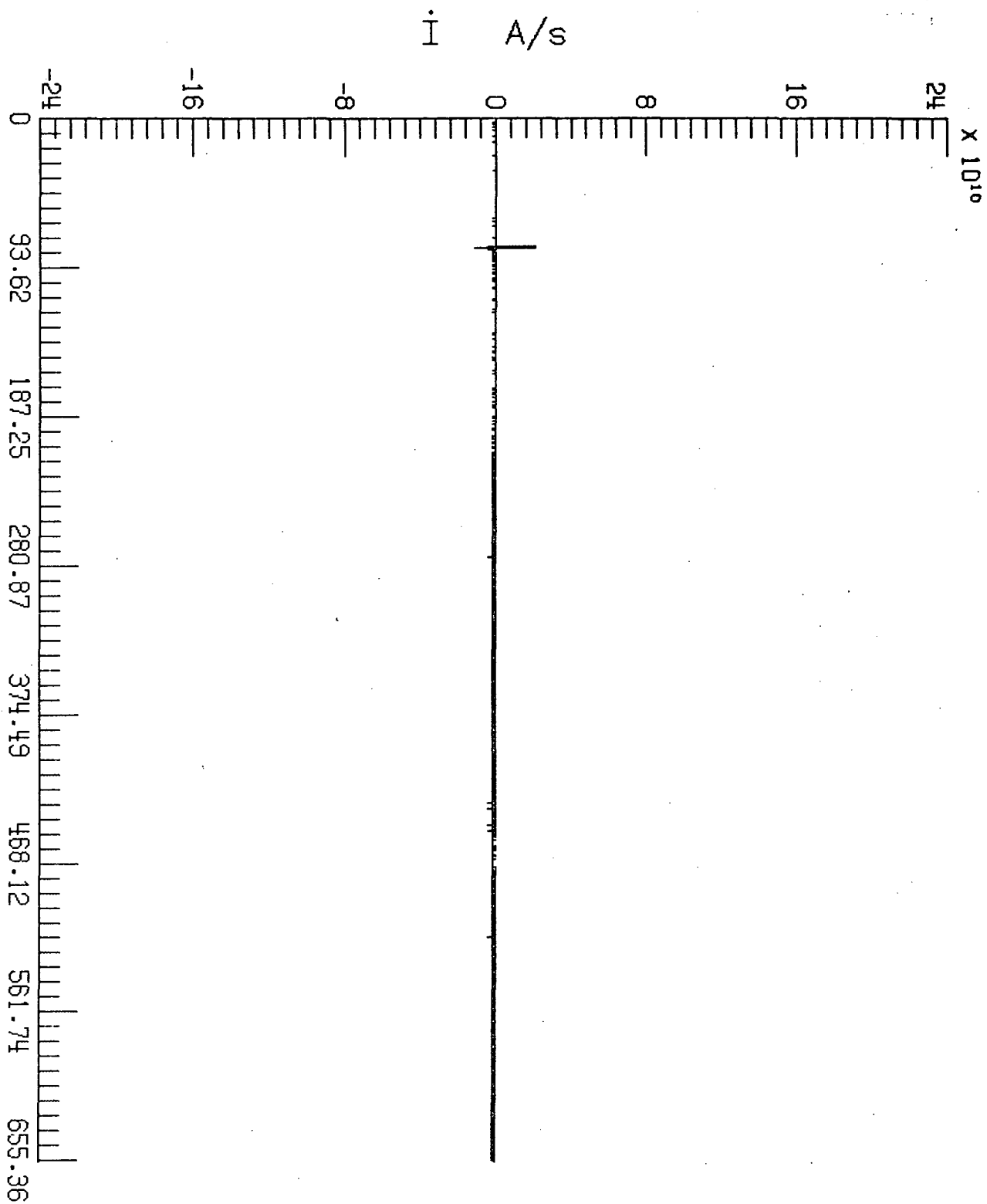




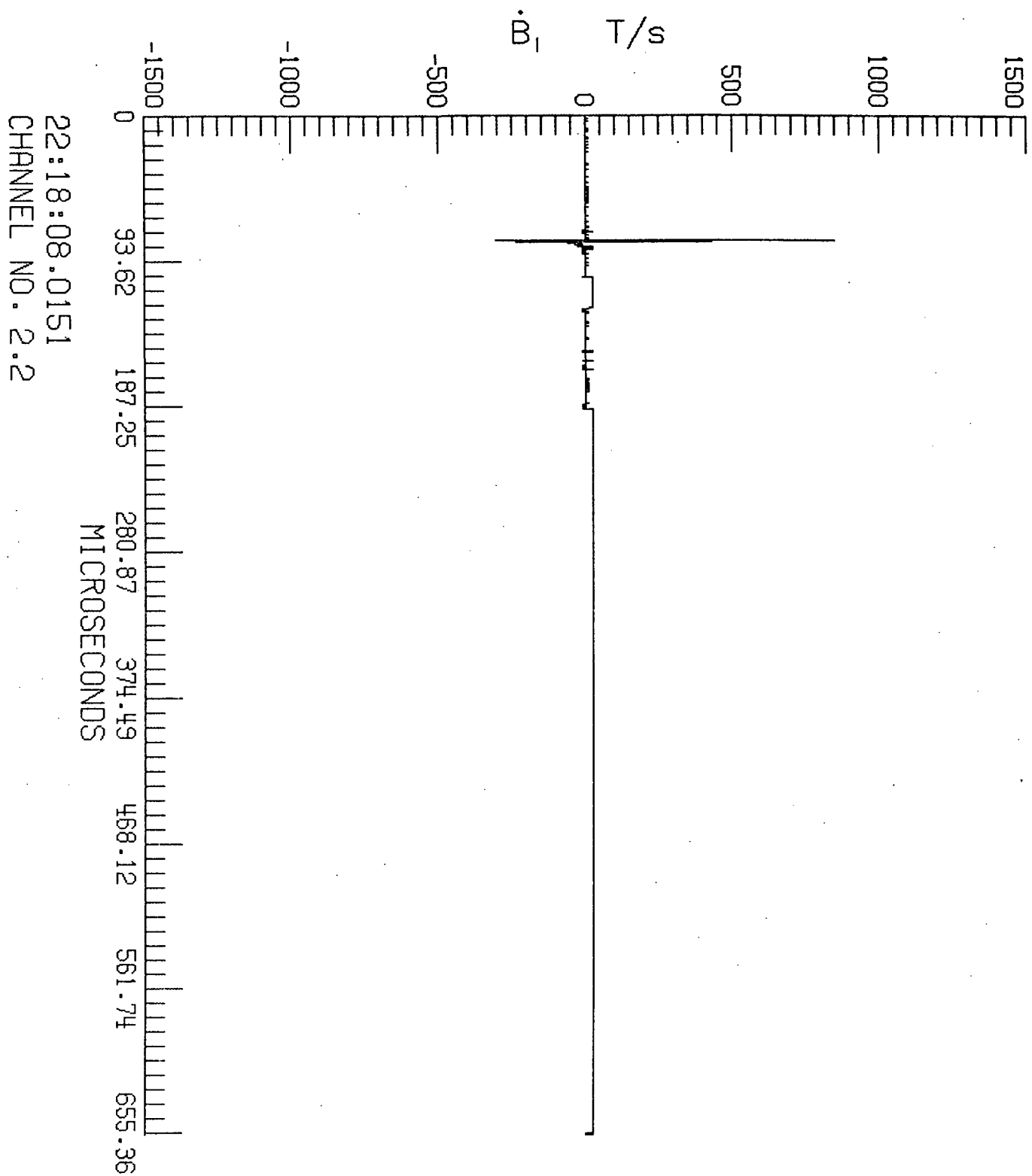
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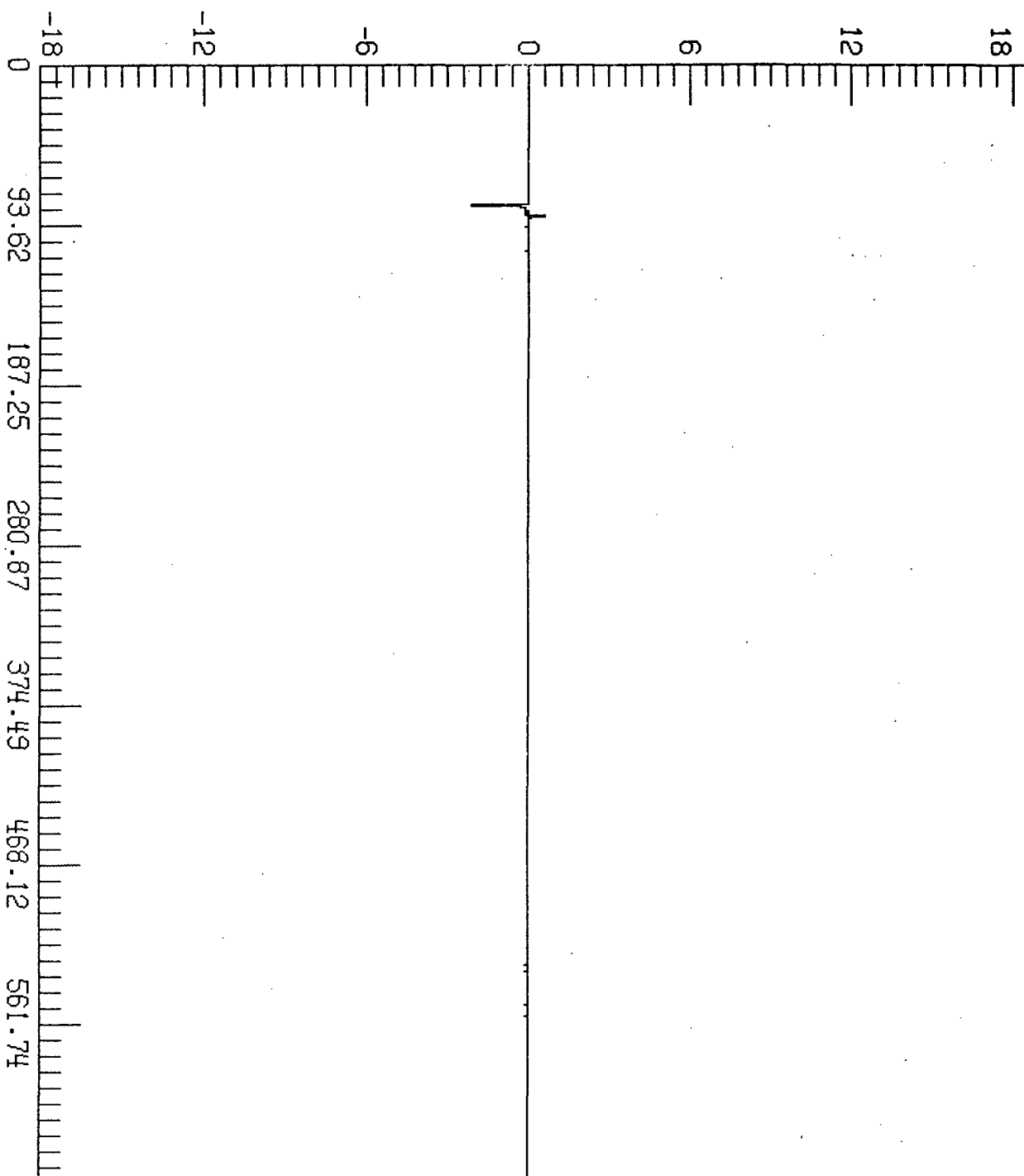




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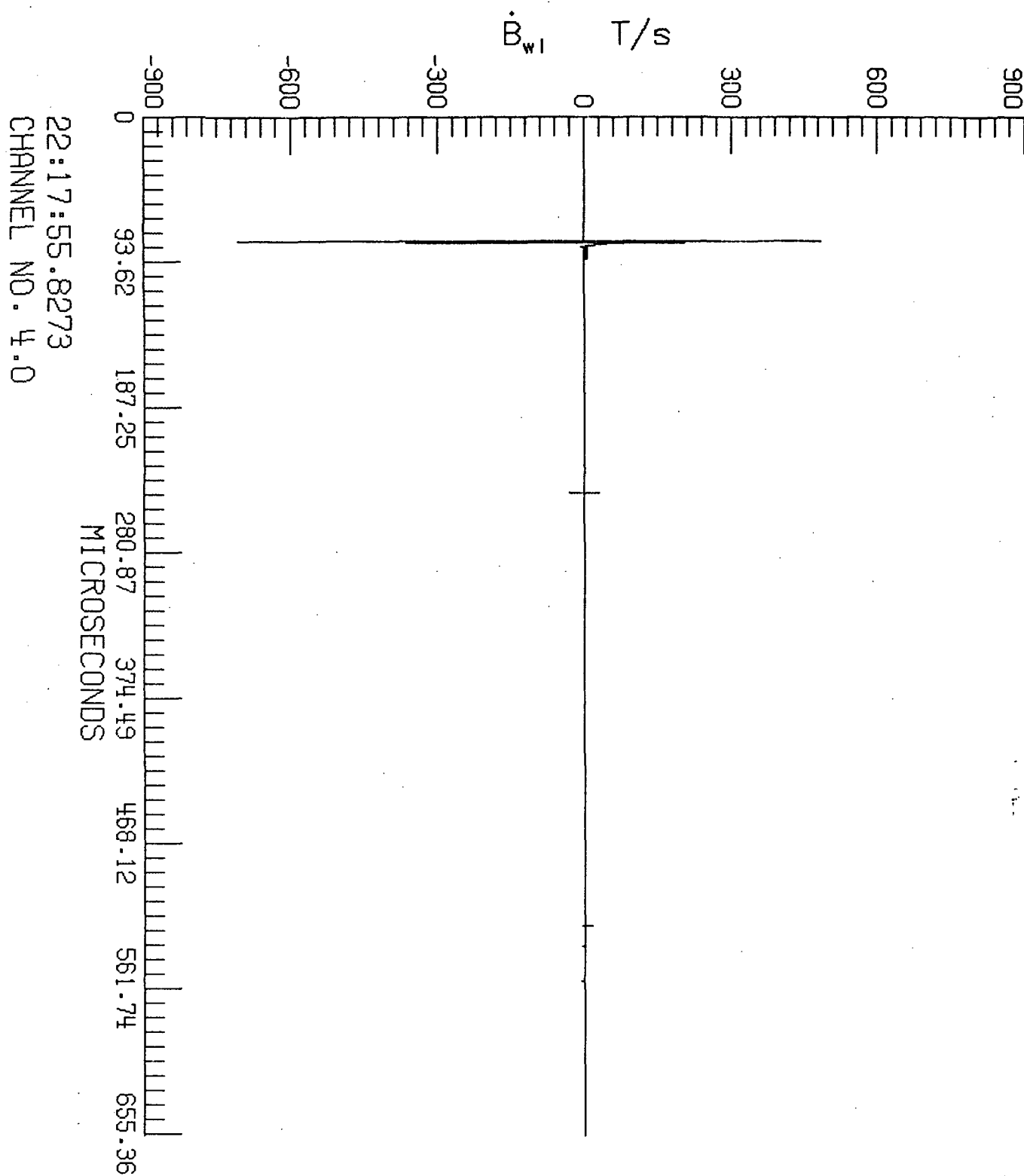


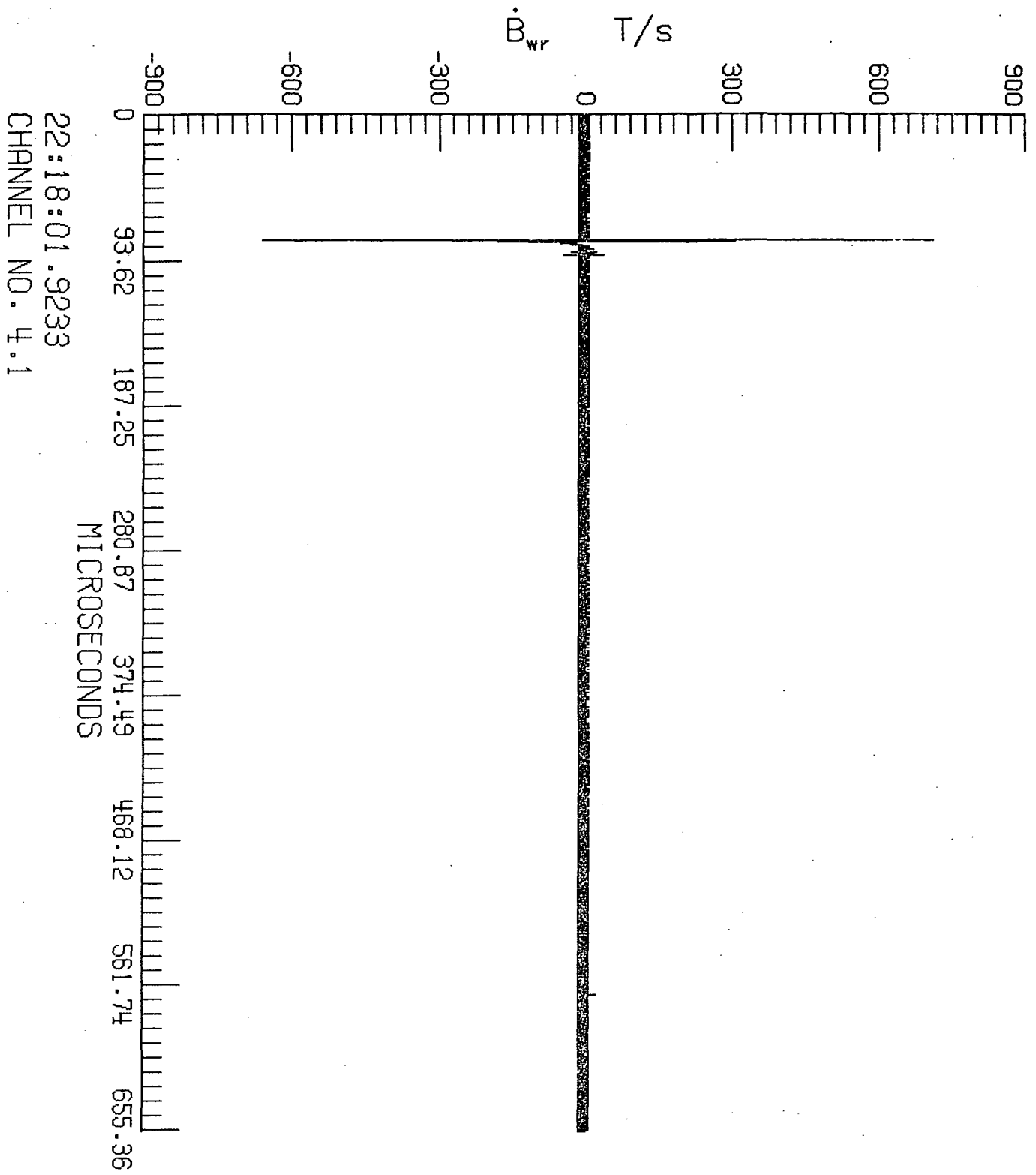
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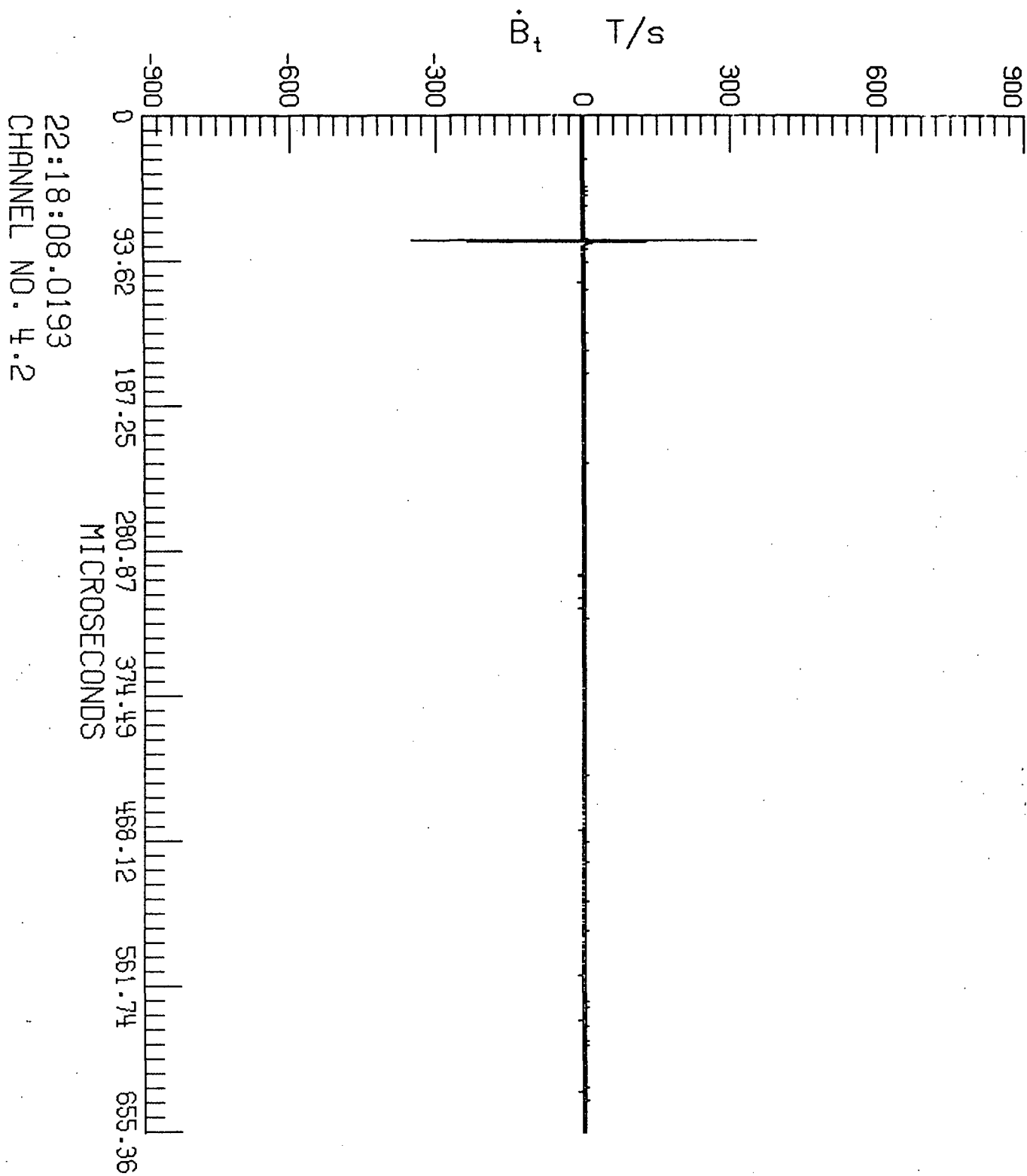


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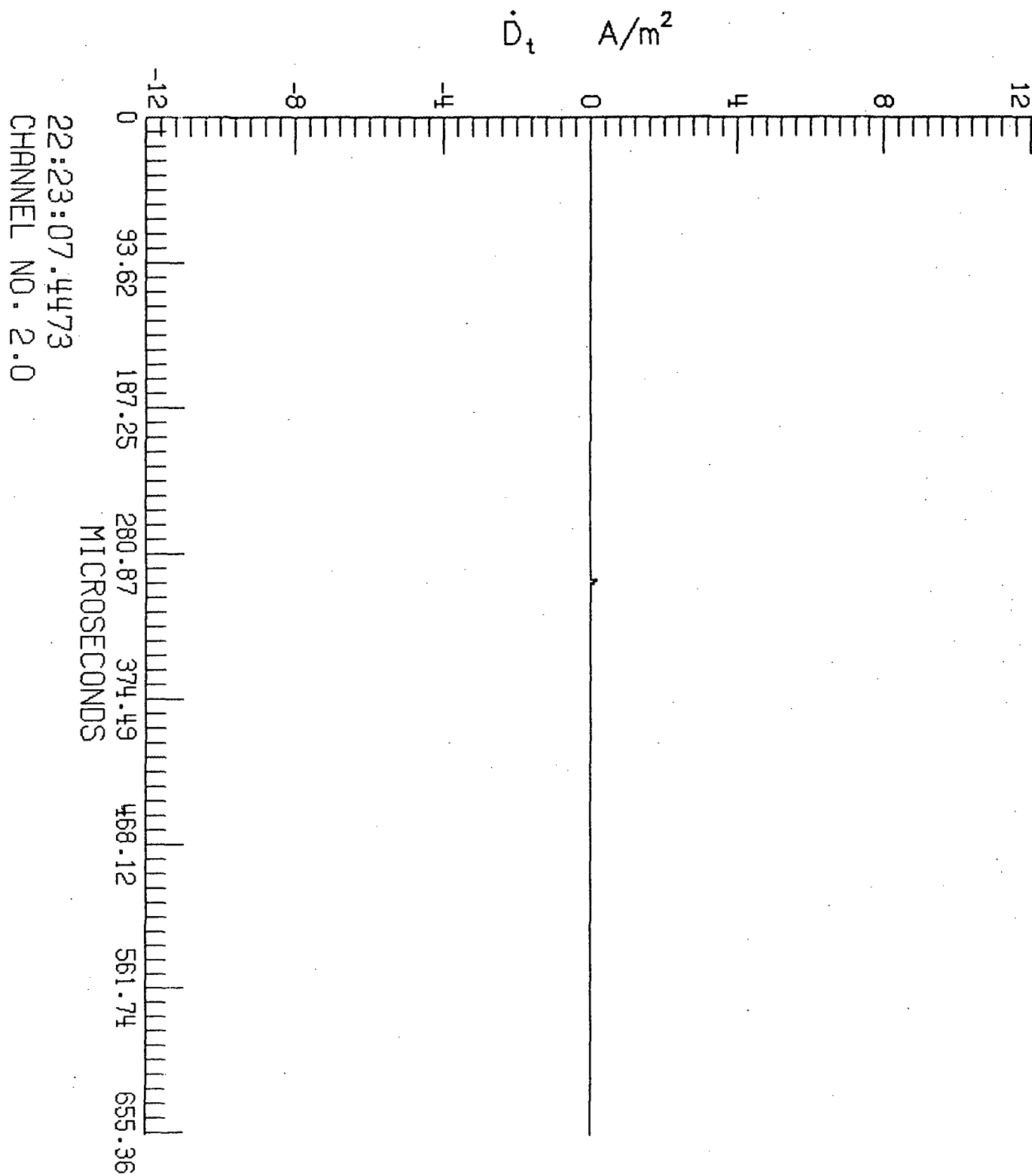






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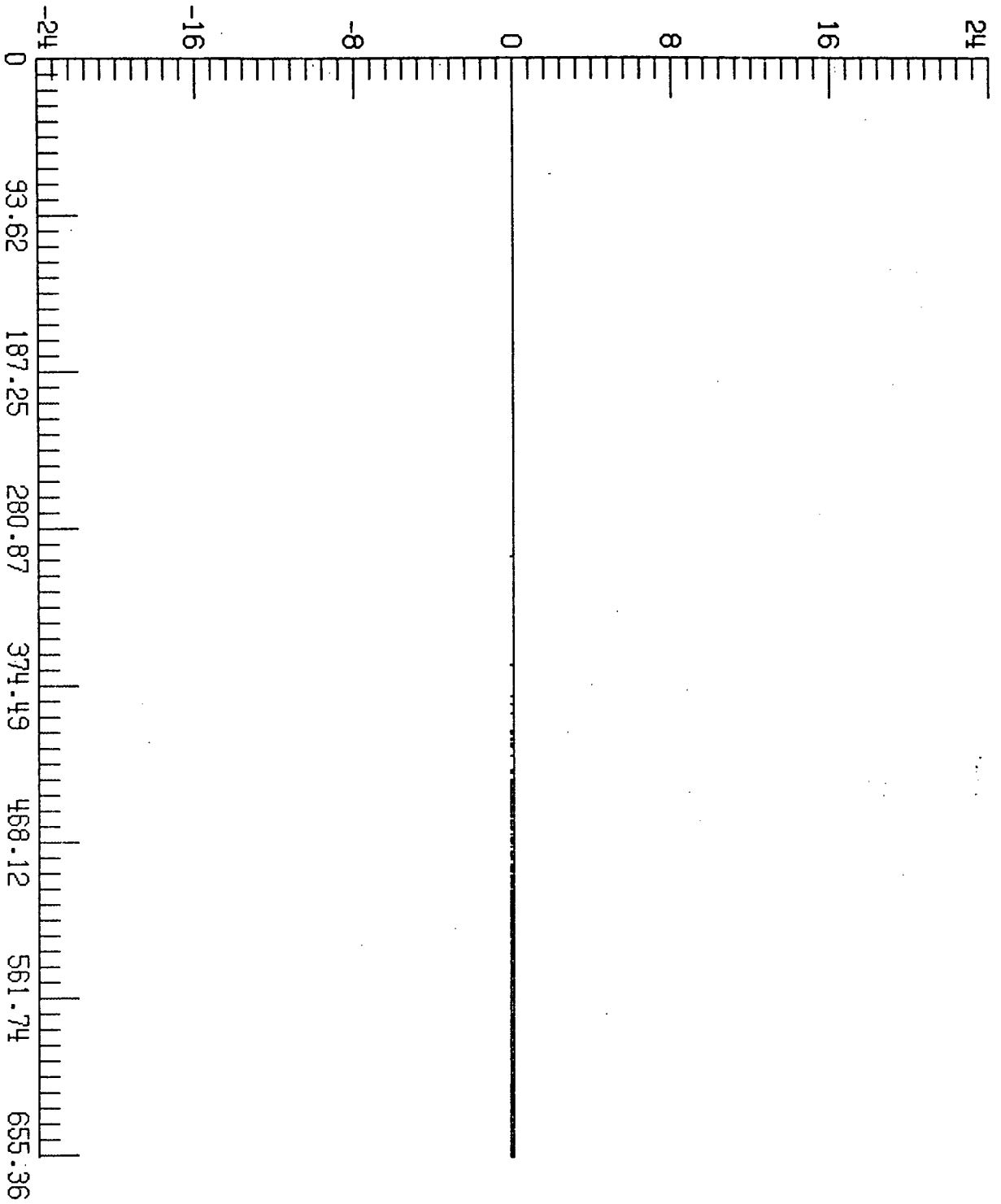
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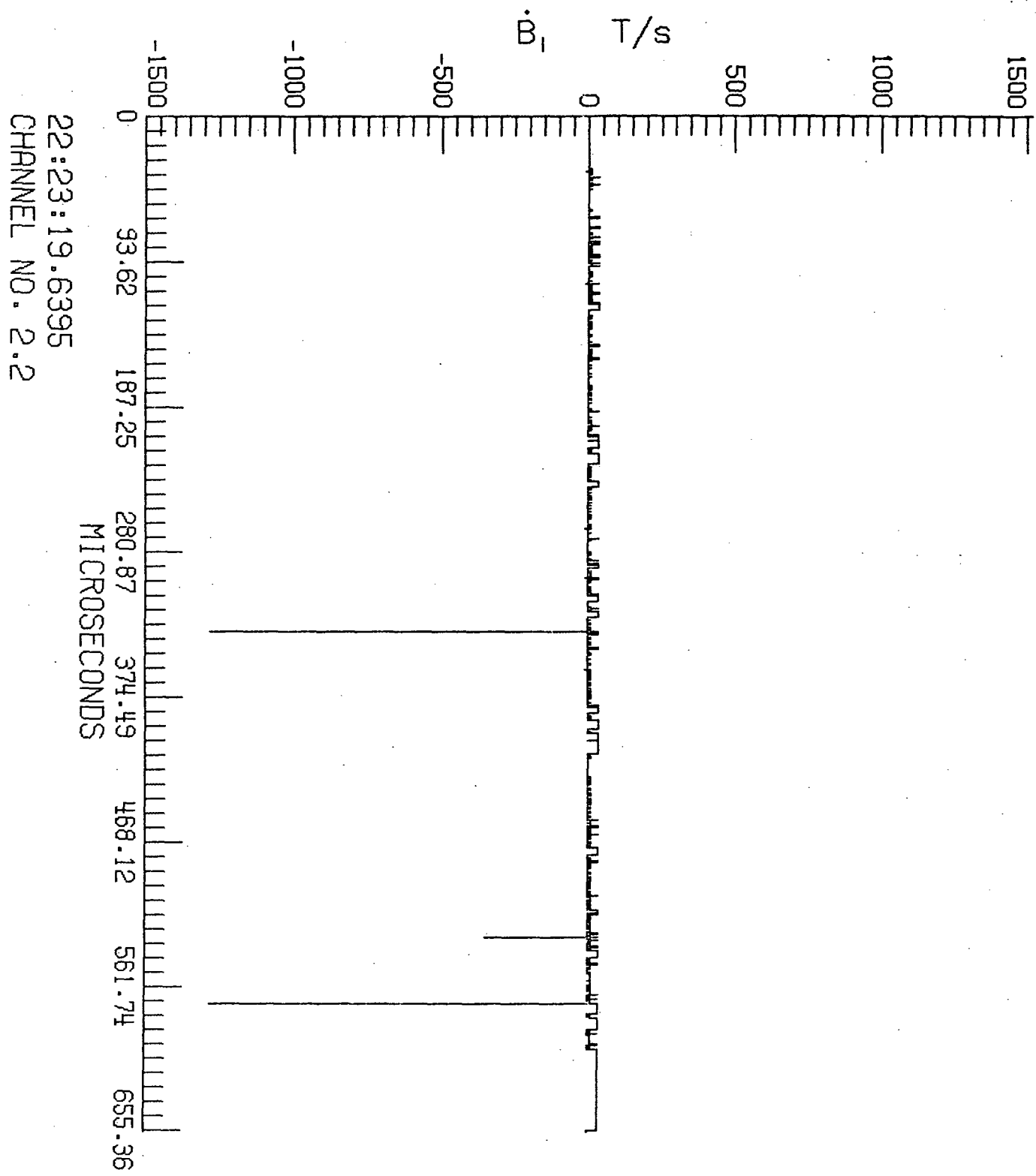
I A/s

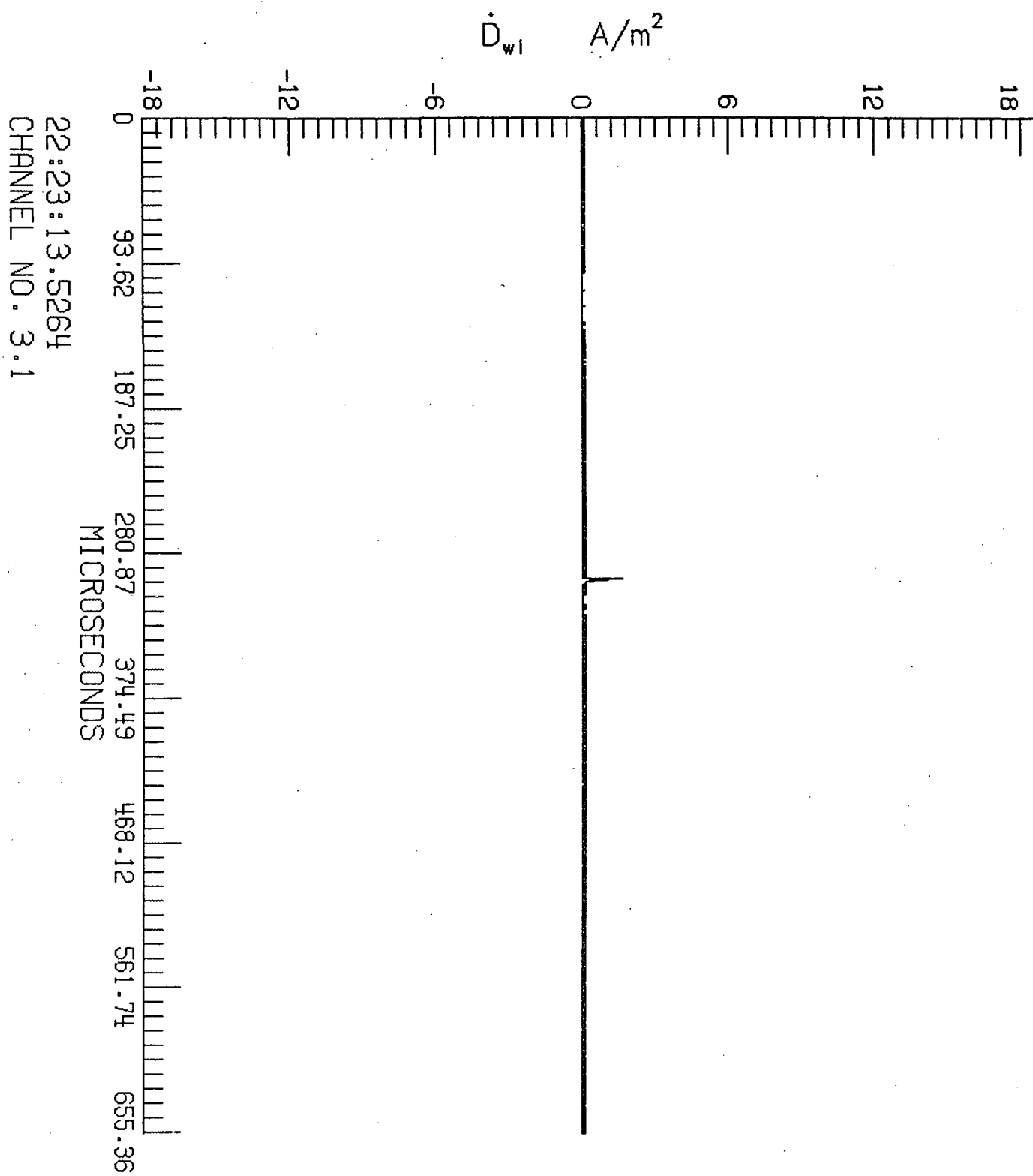
$\times 10^{10}$



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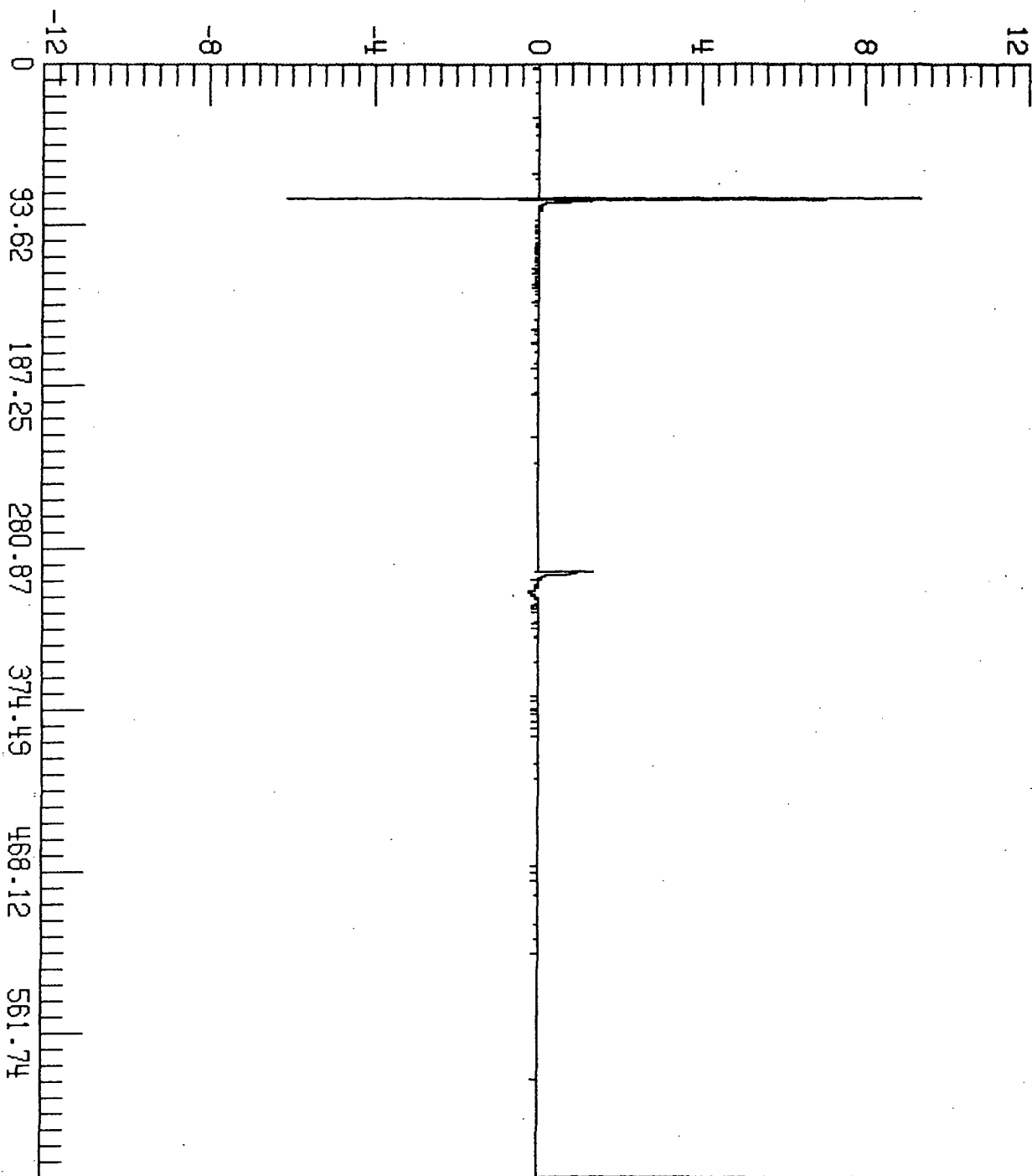




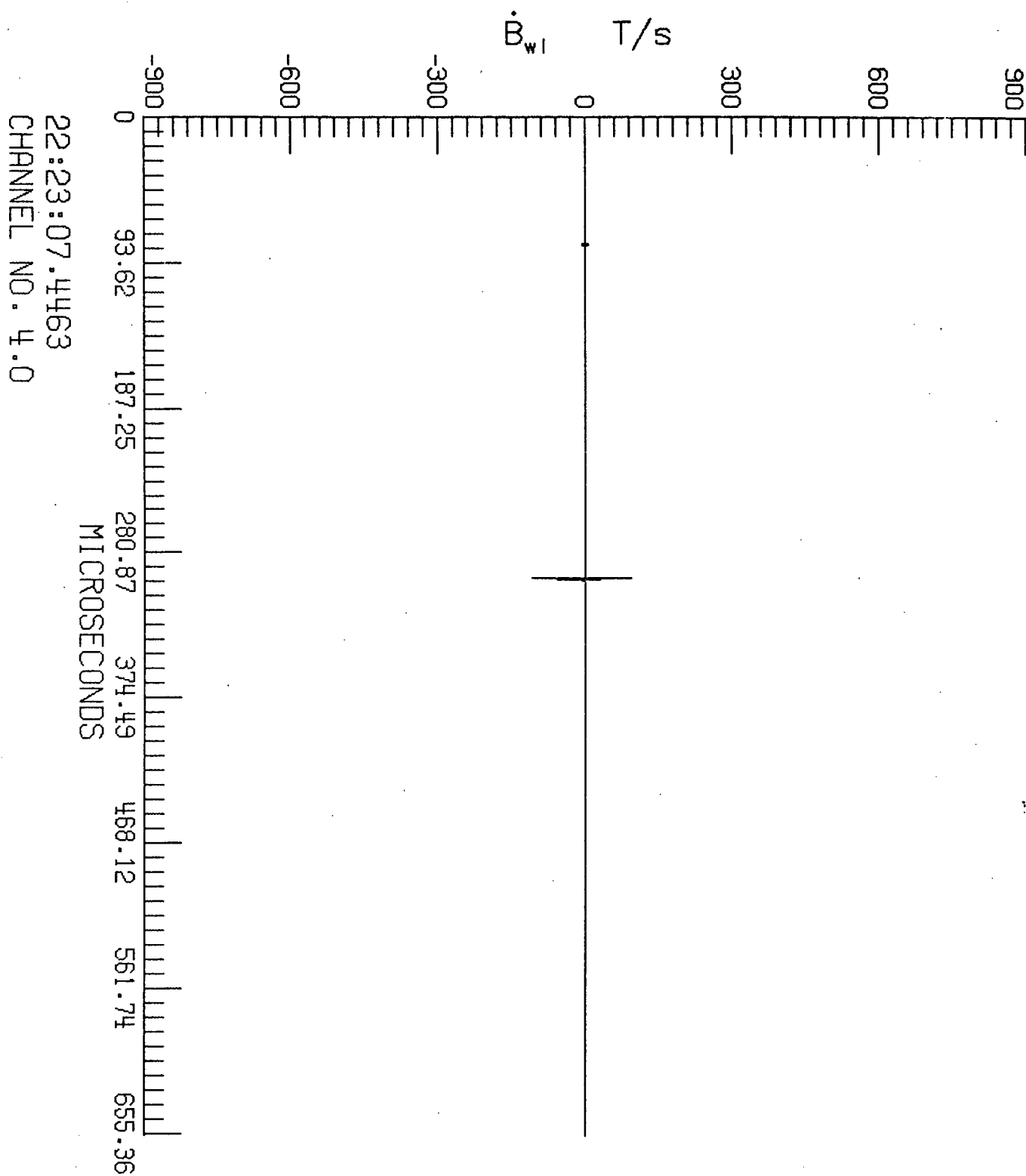
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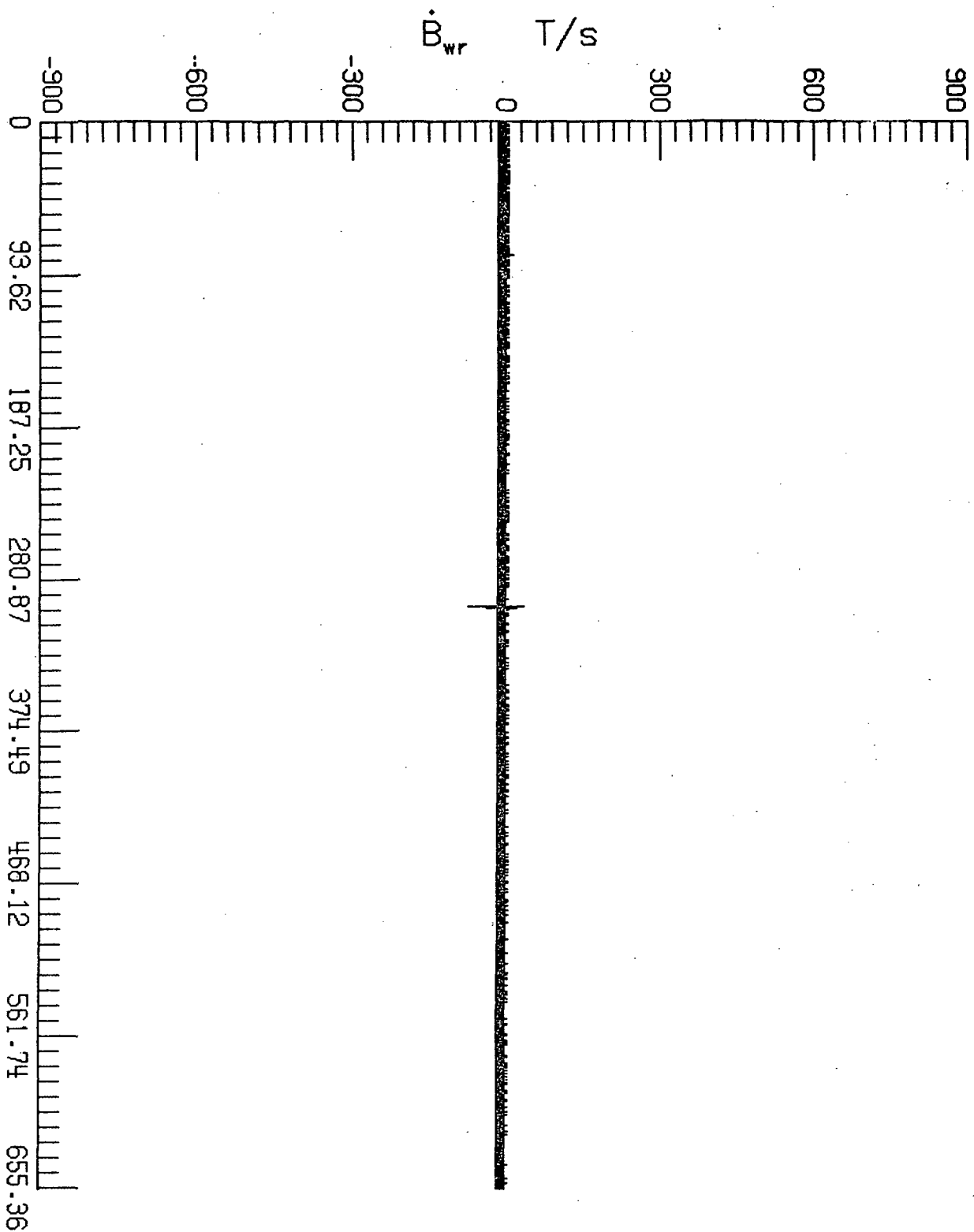
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$\dot{D}_f$  A/m<sup>2</sup>

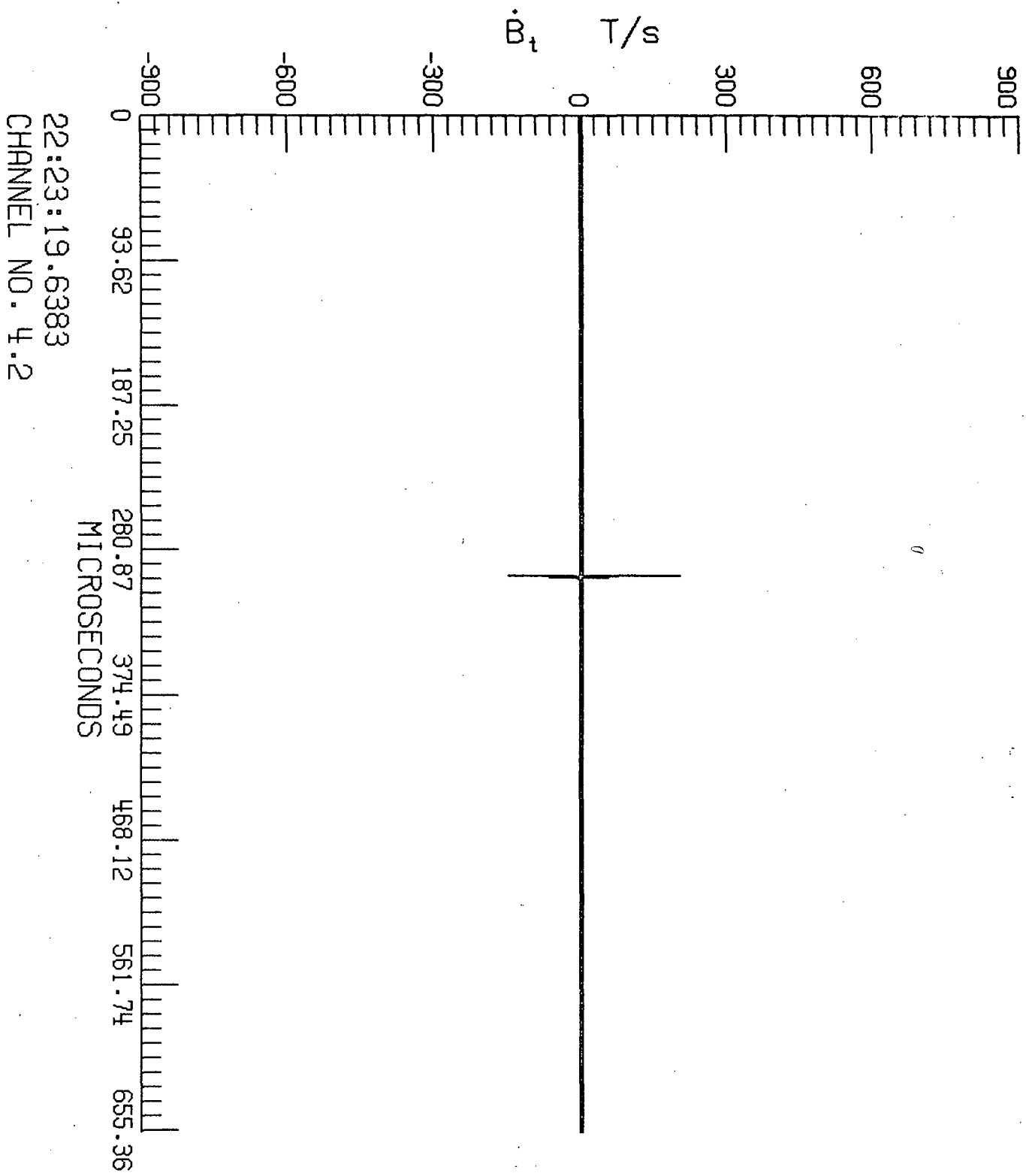


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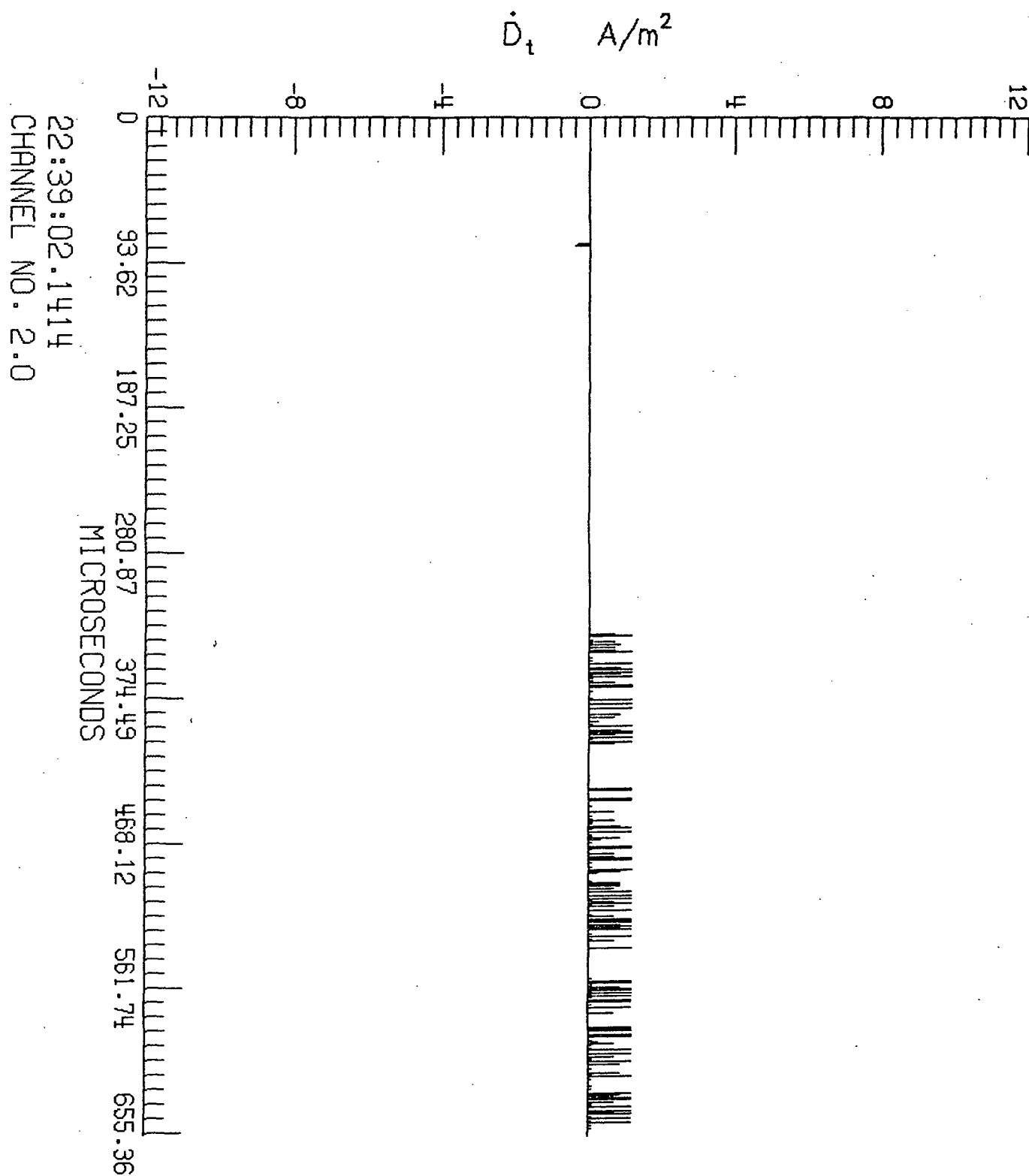


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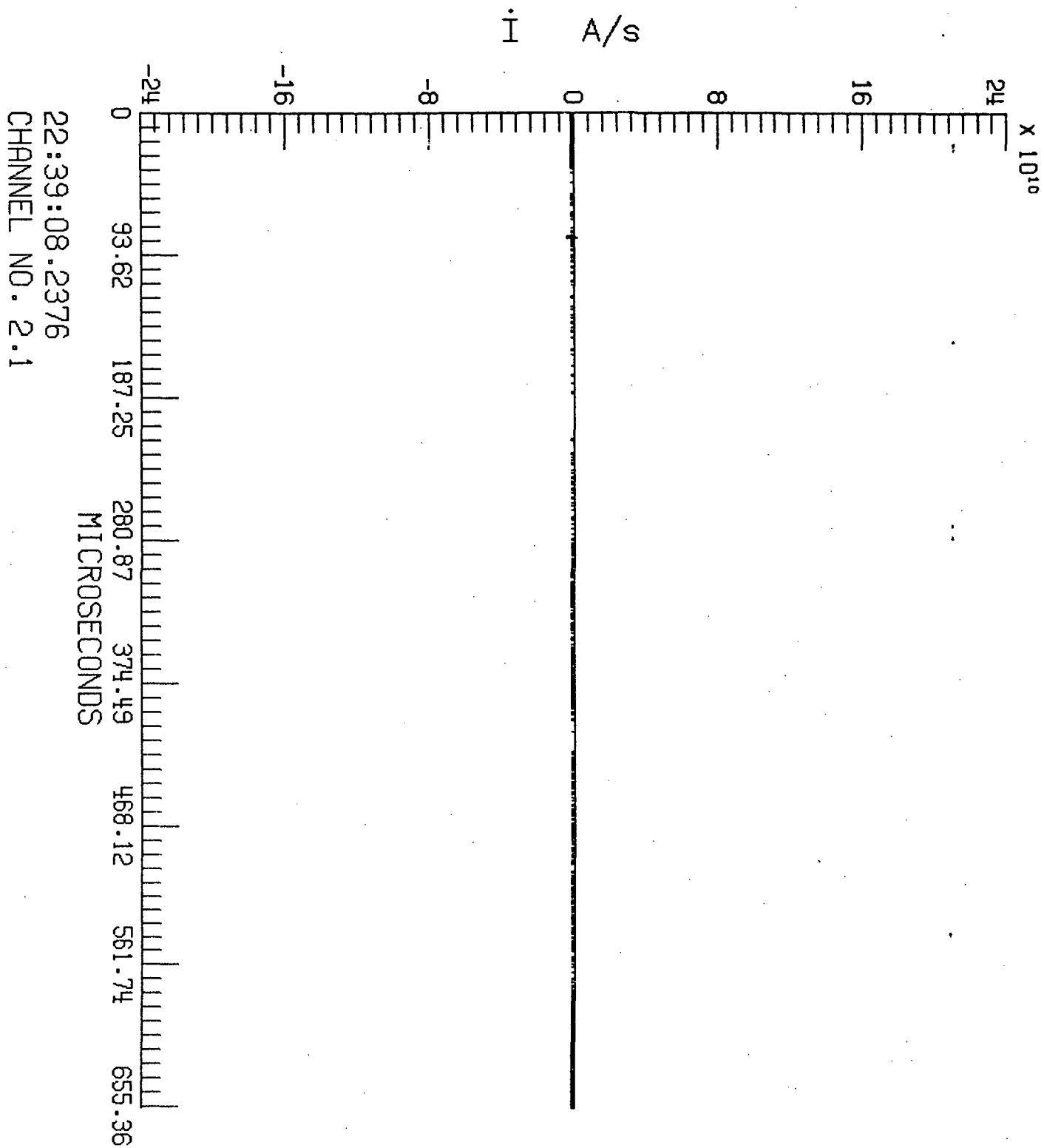


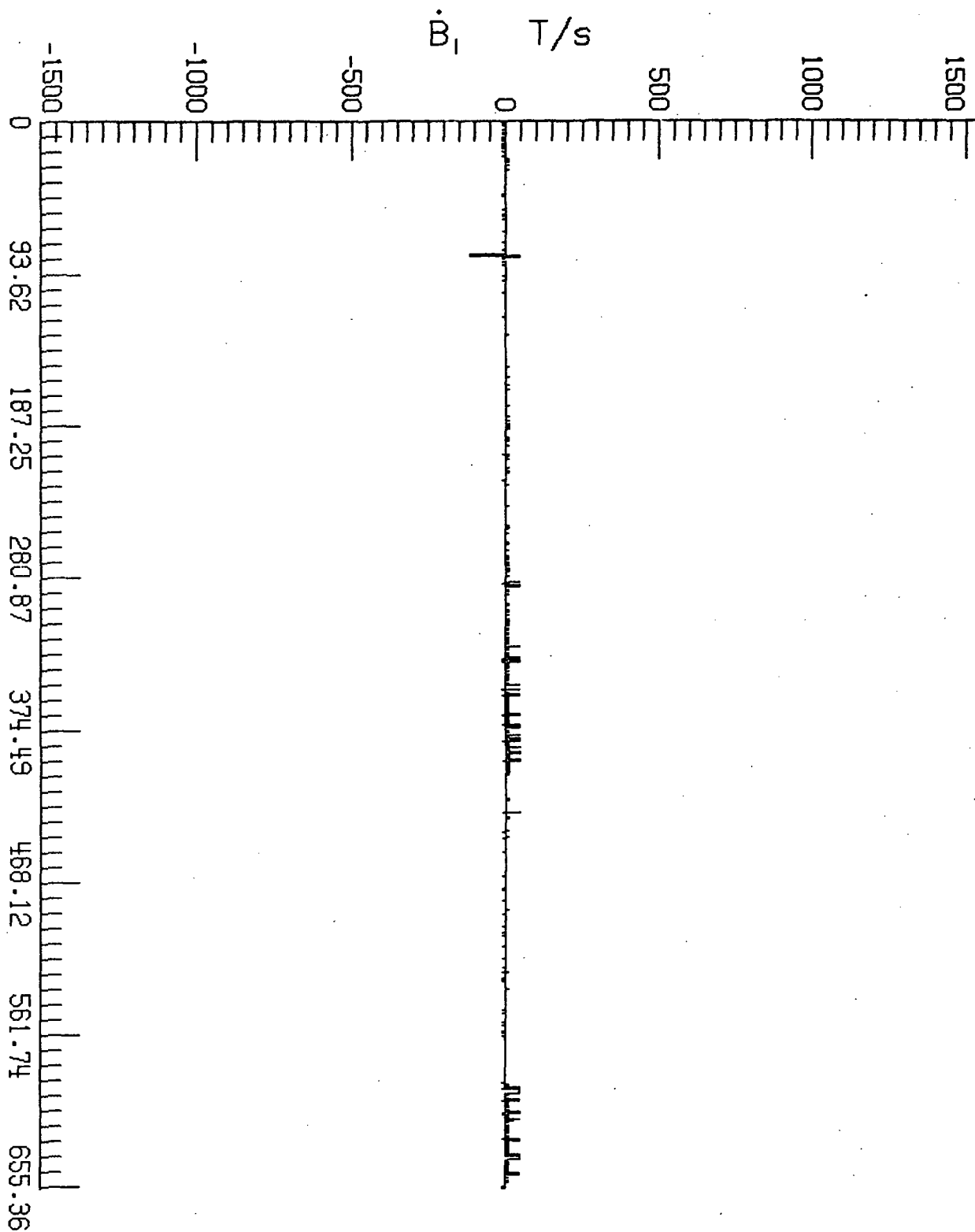
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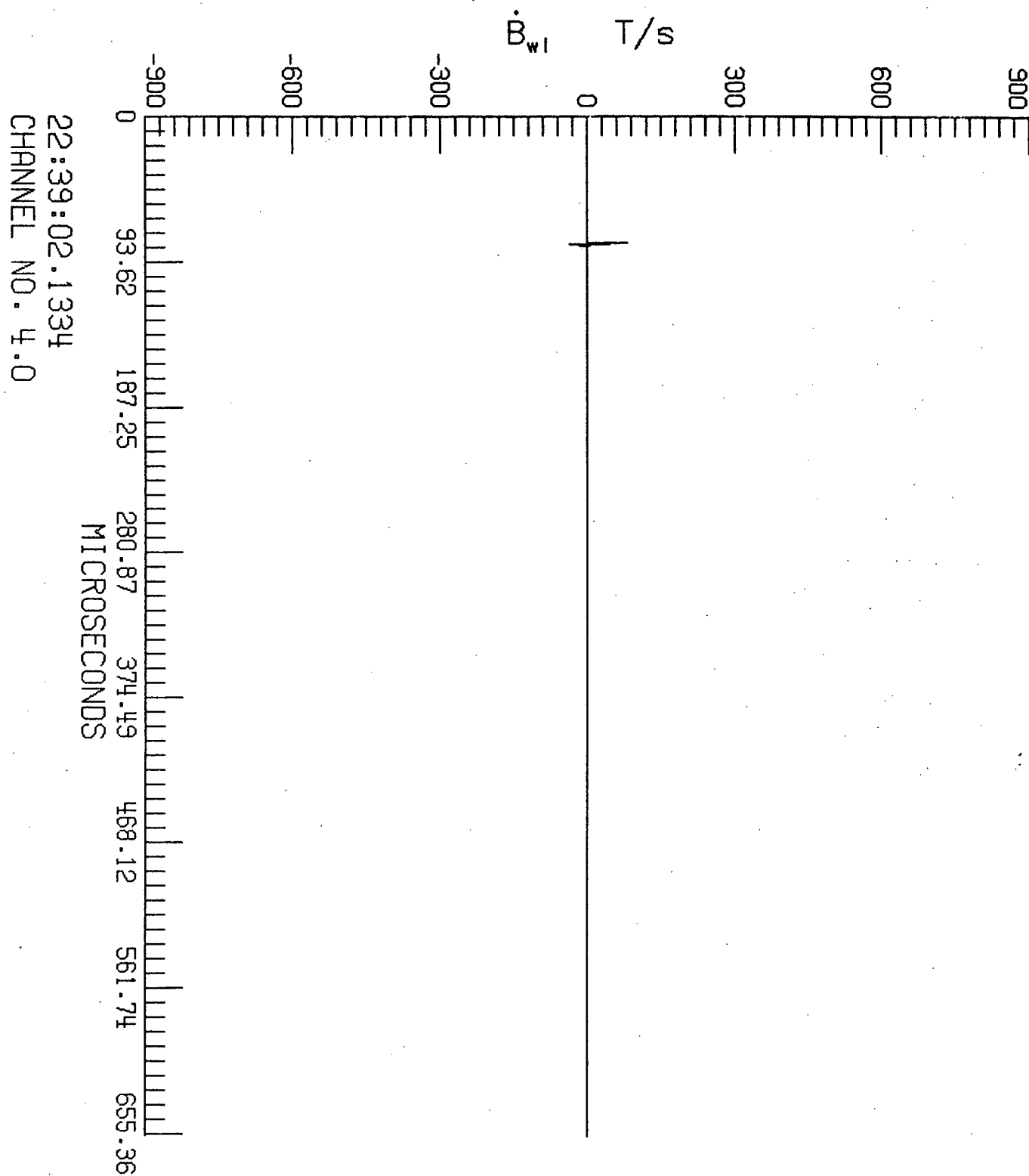




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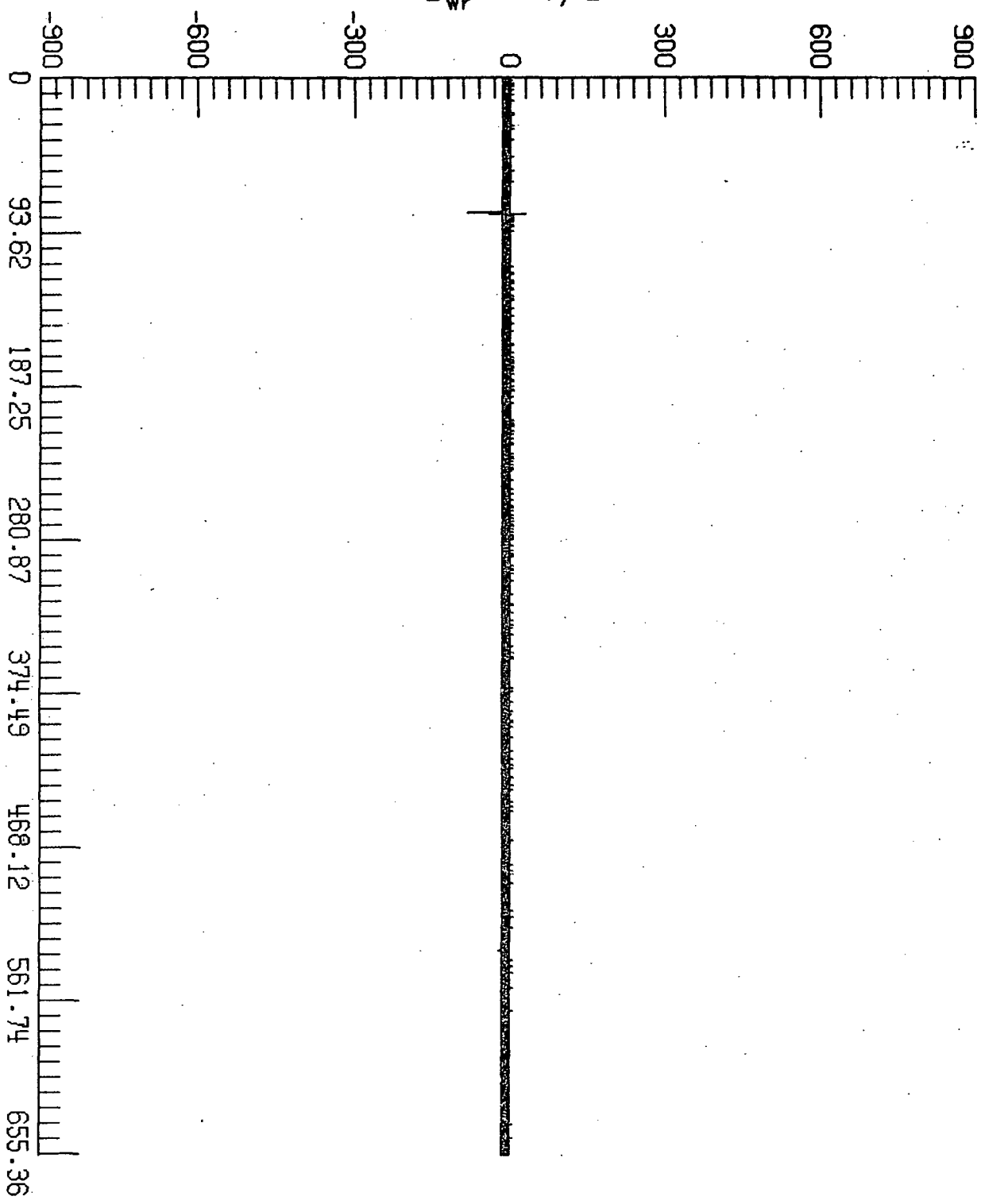
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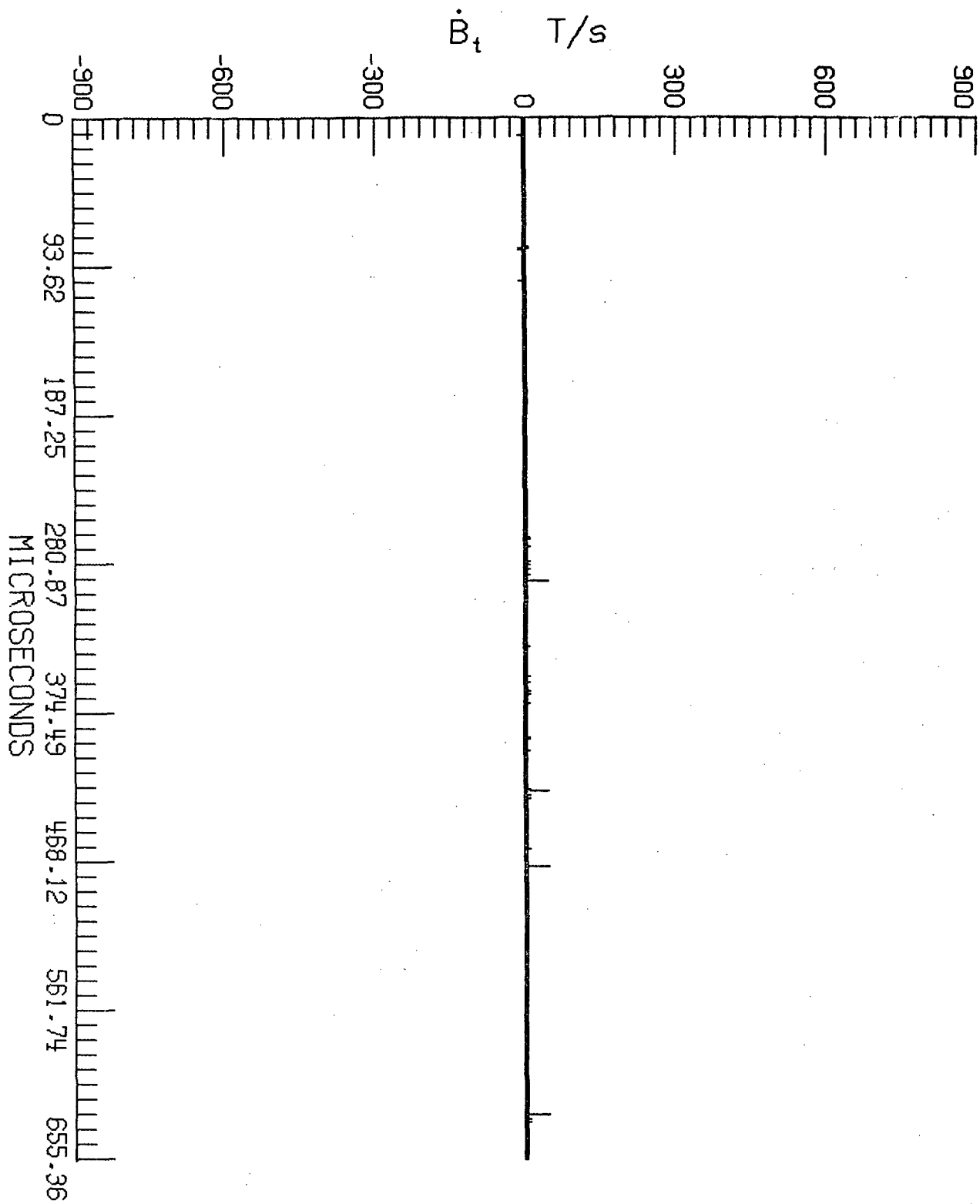
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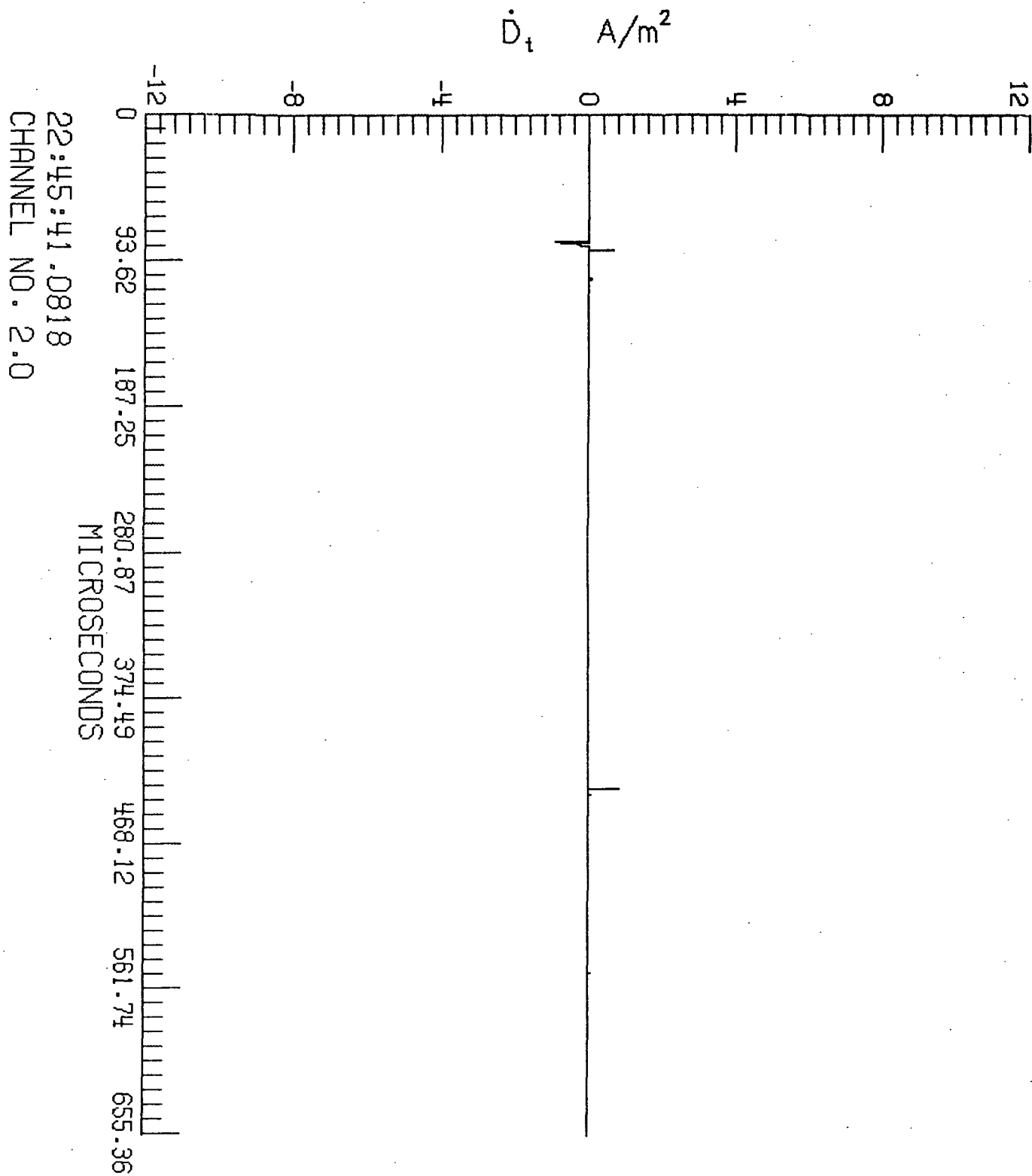
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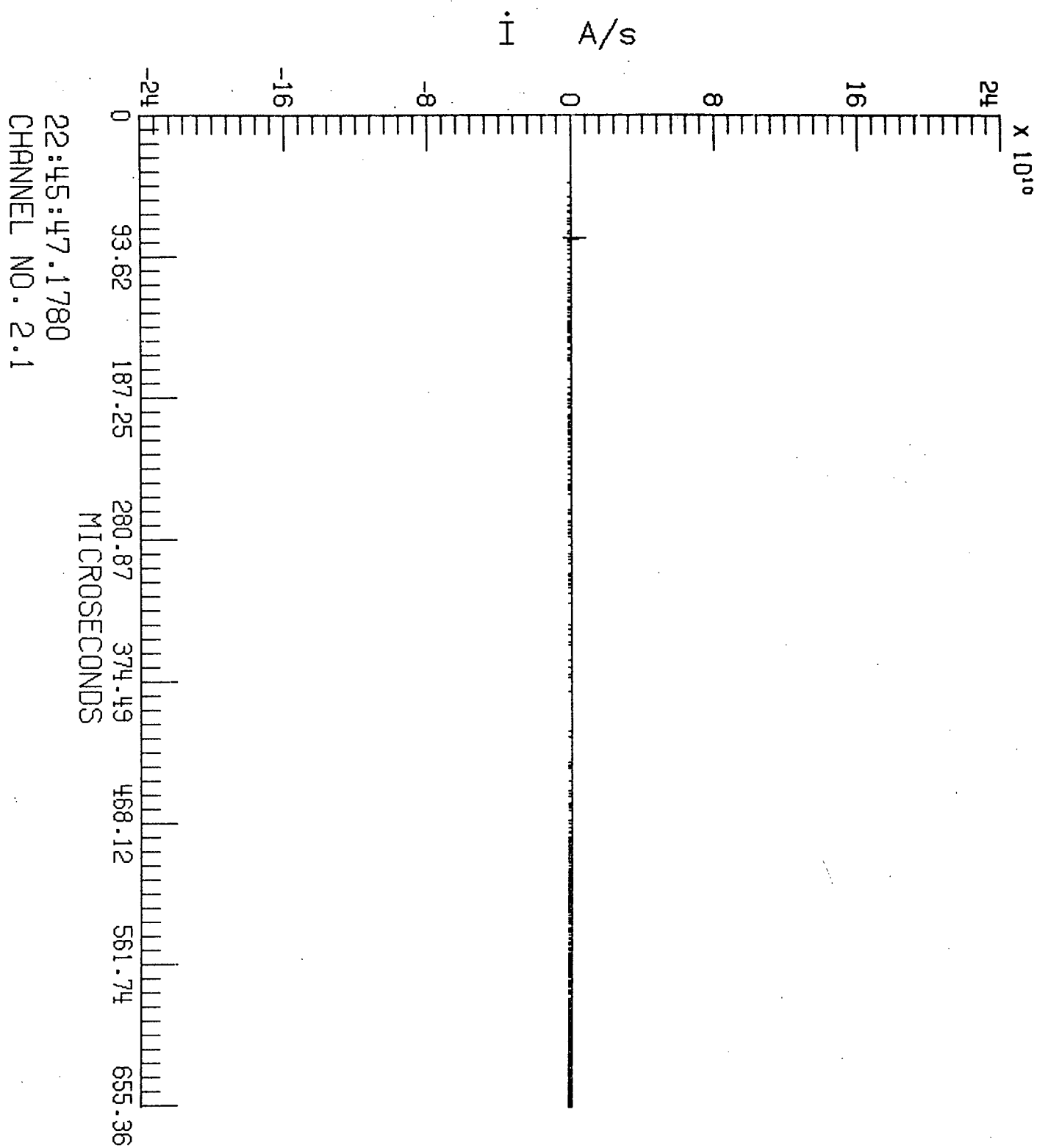
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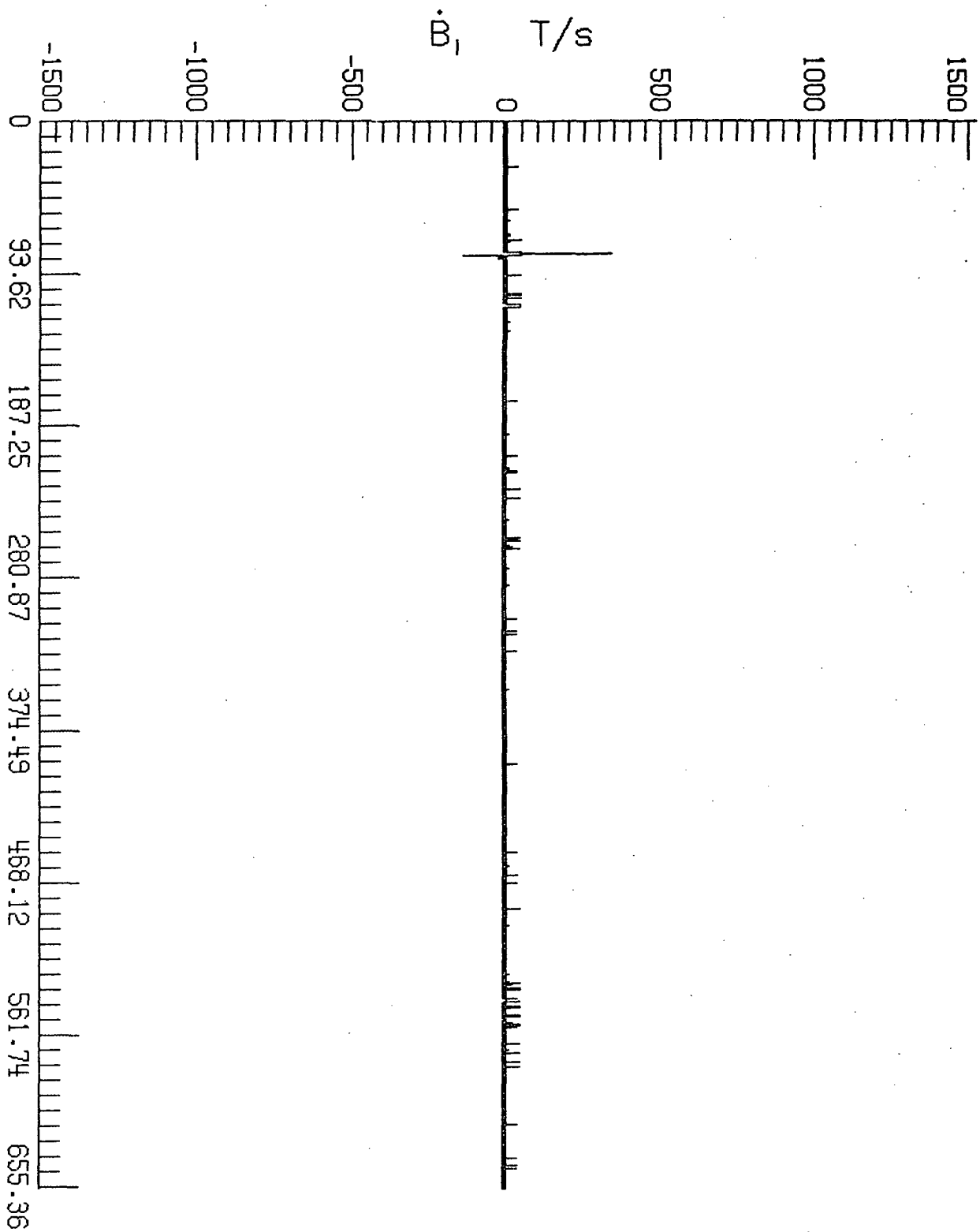




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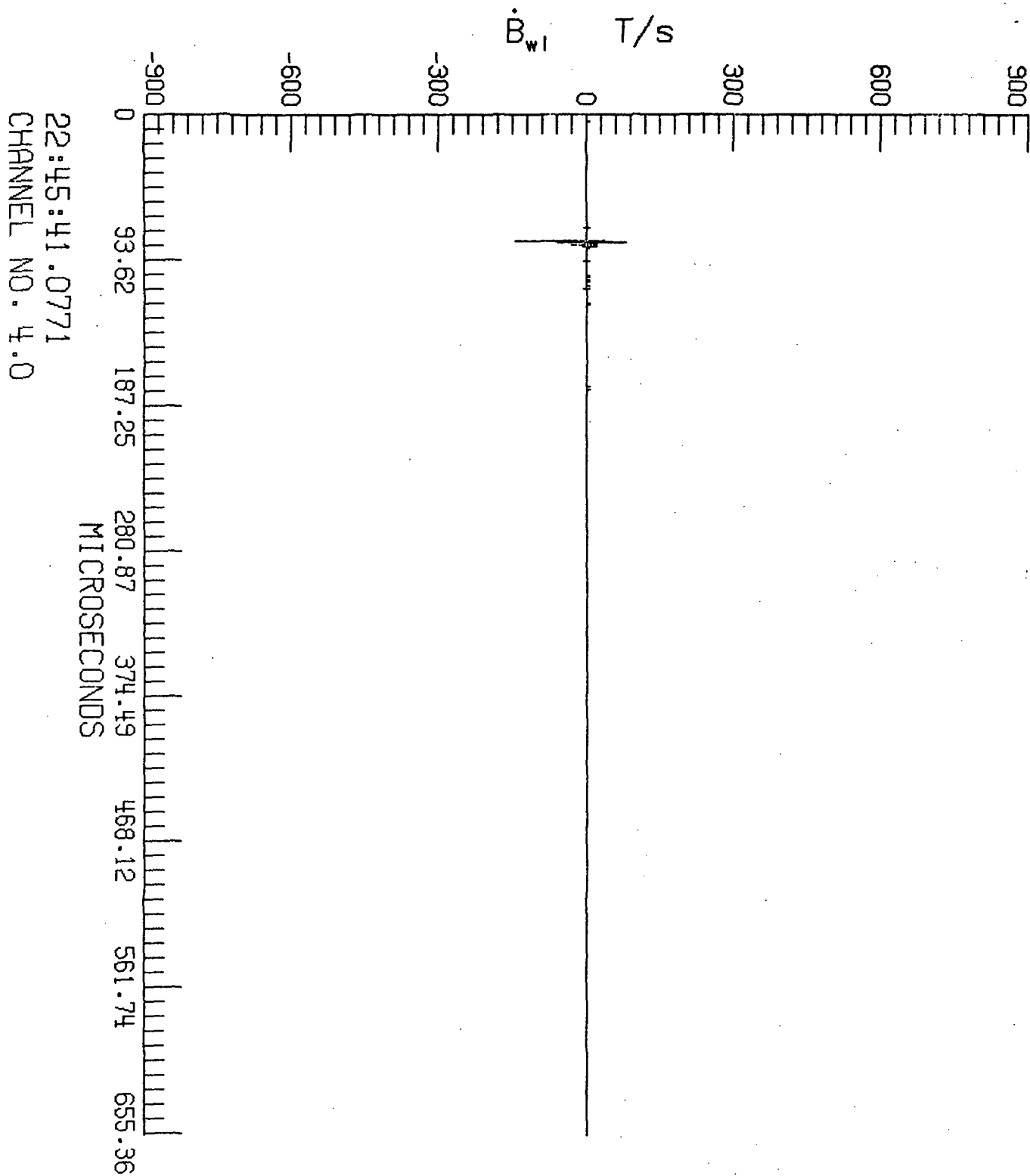


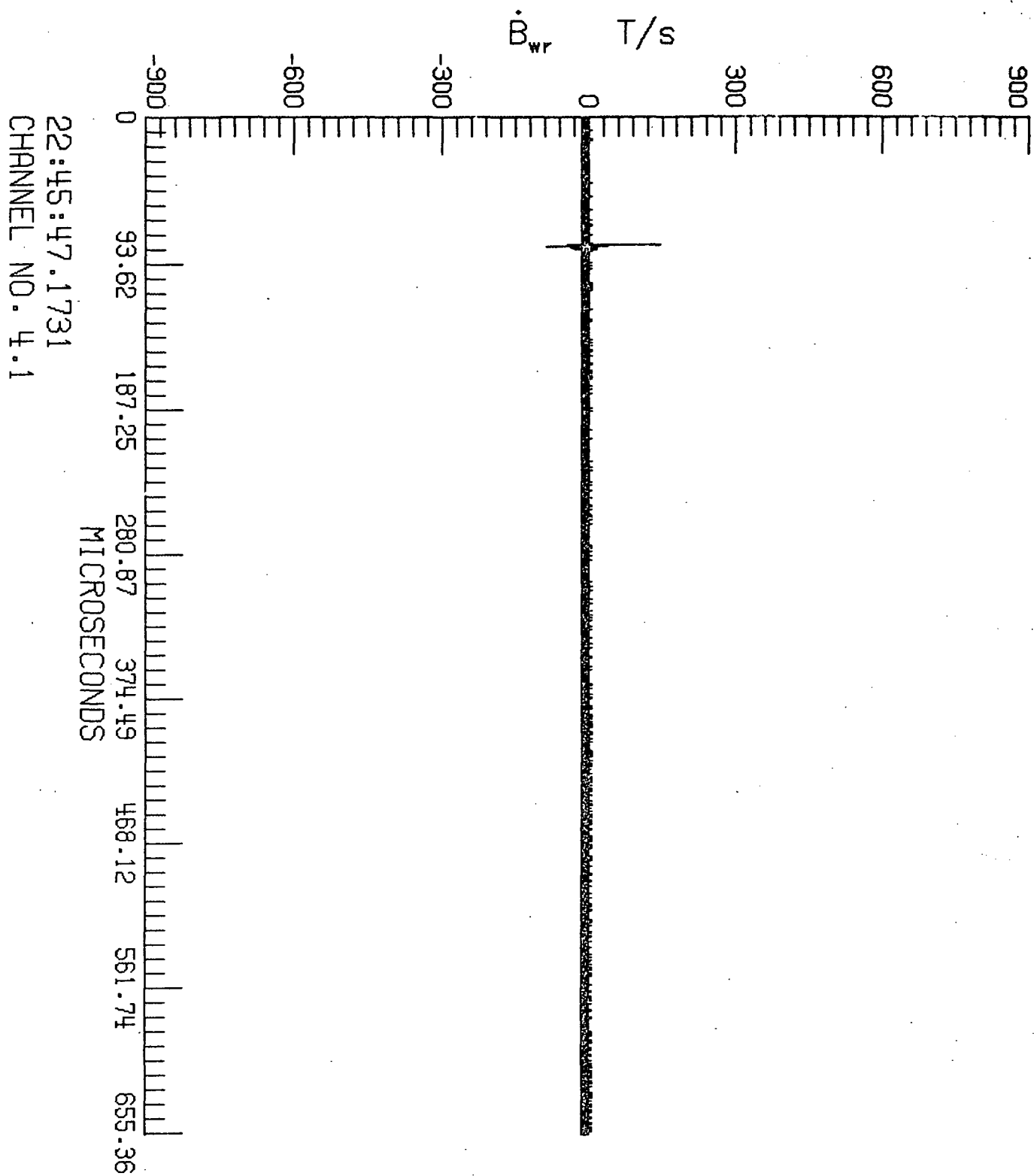
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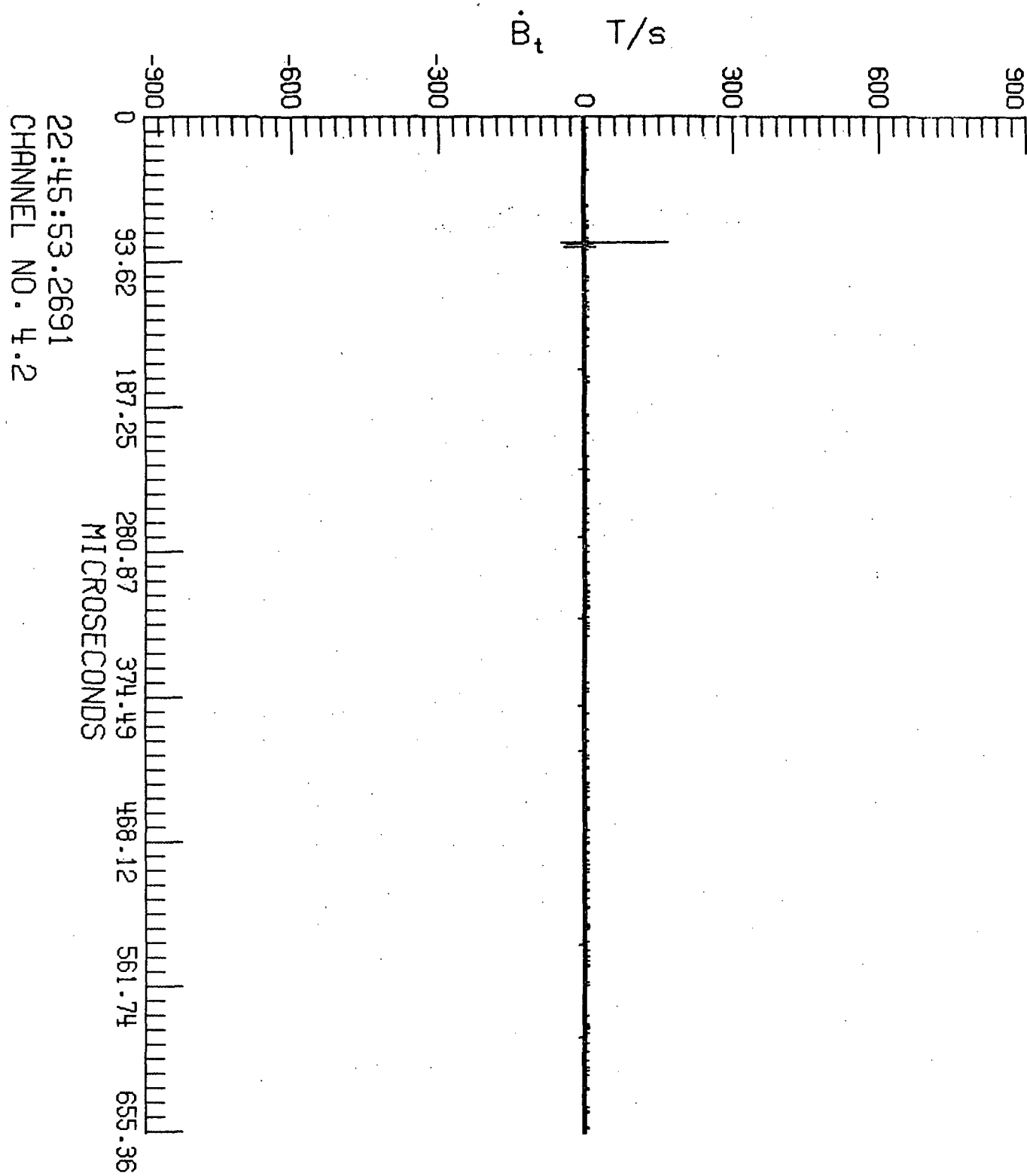


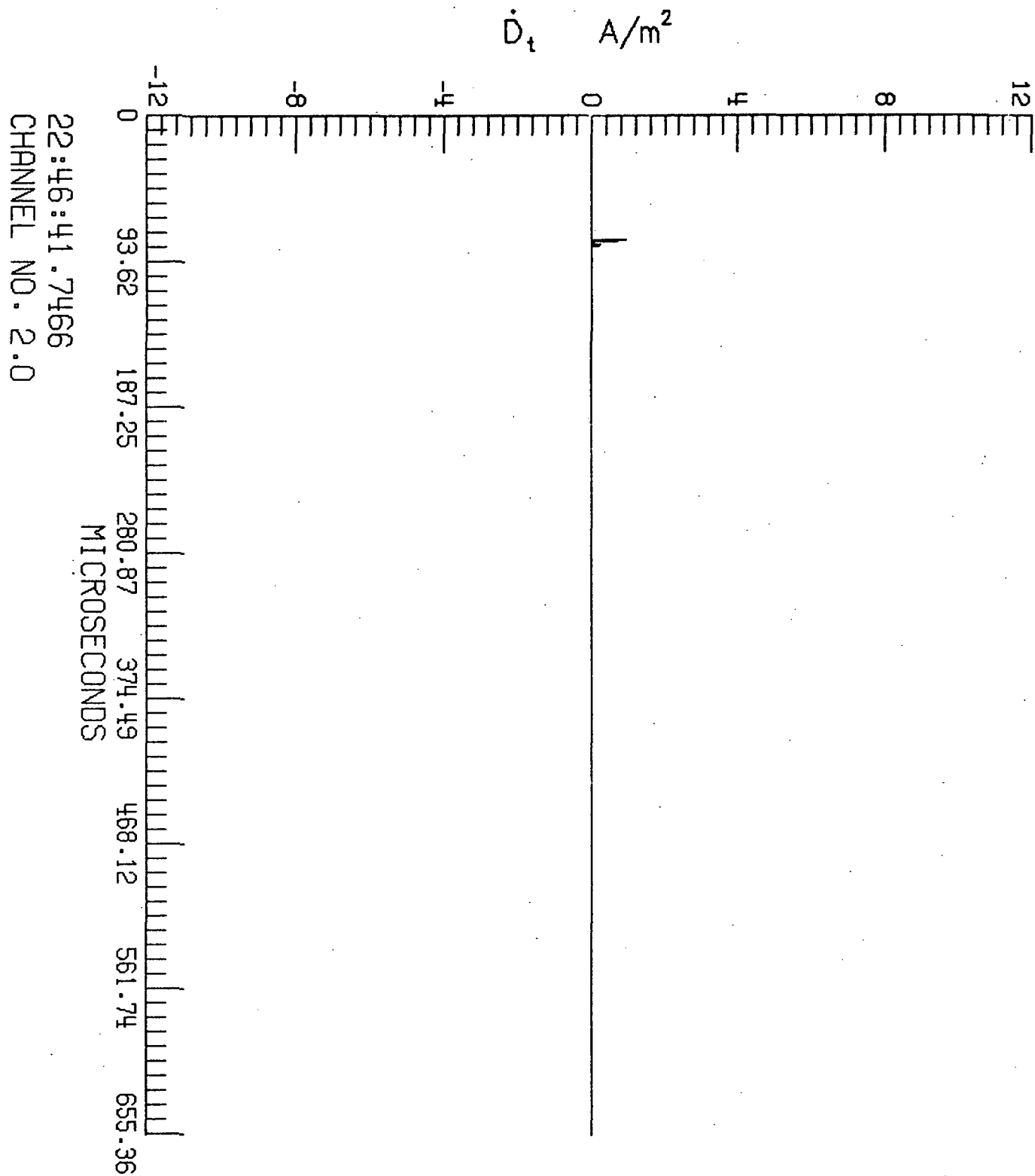
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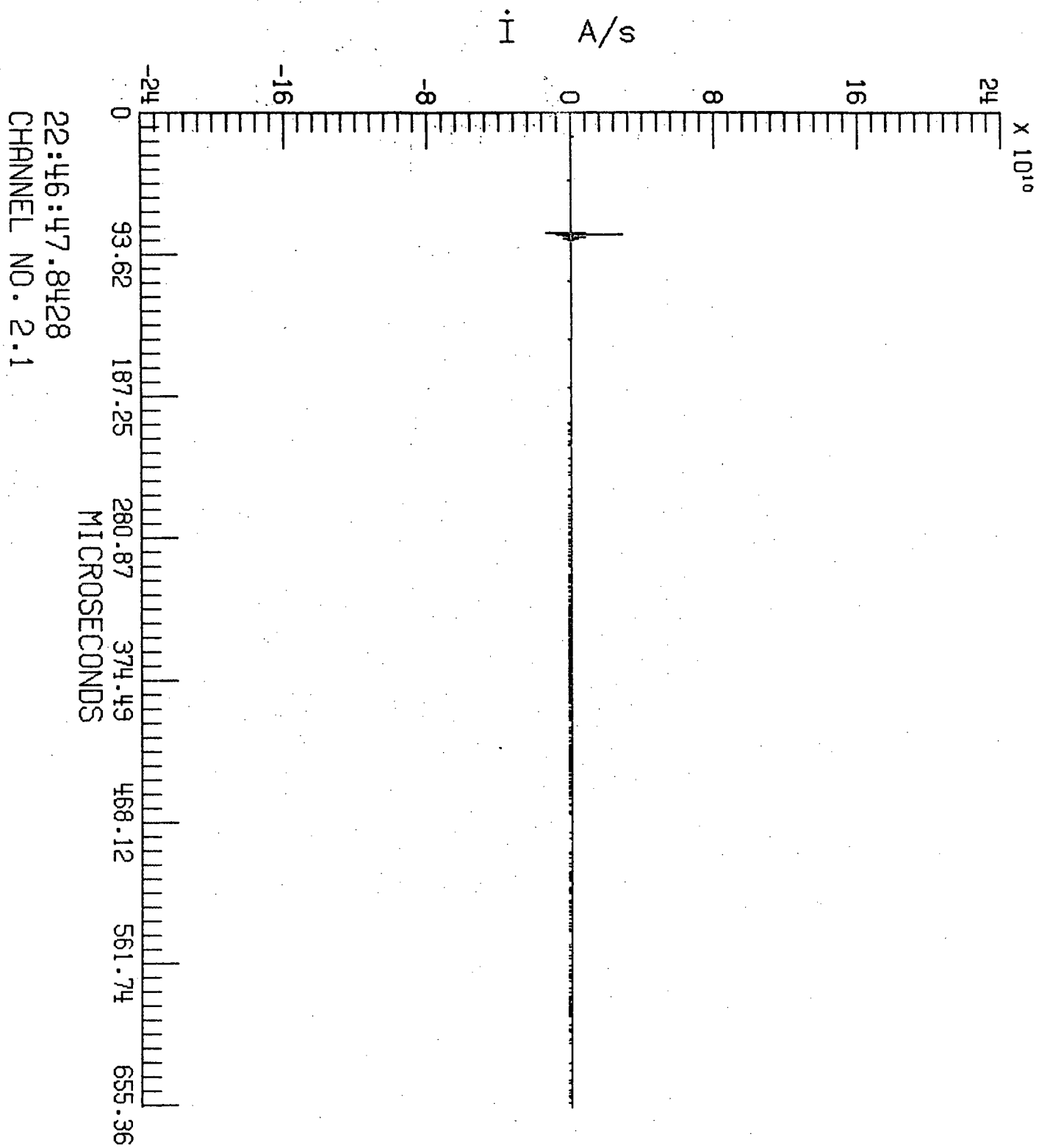
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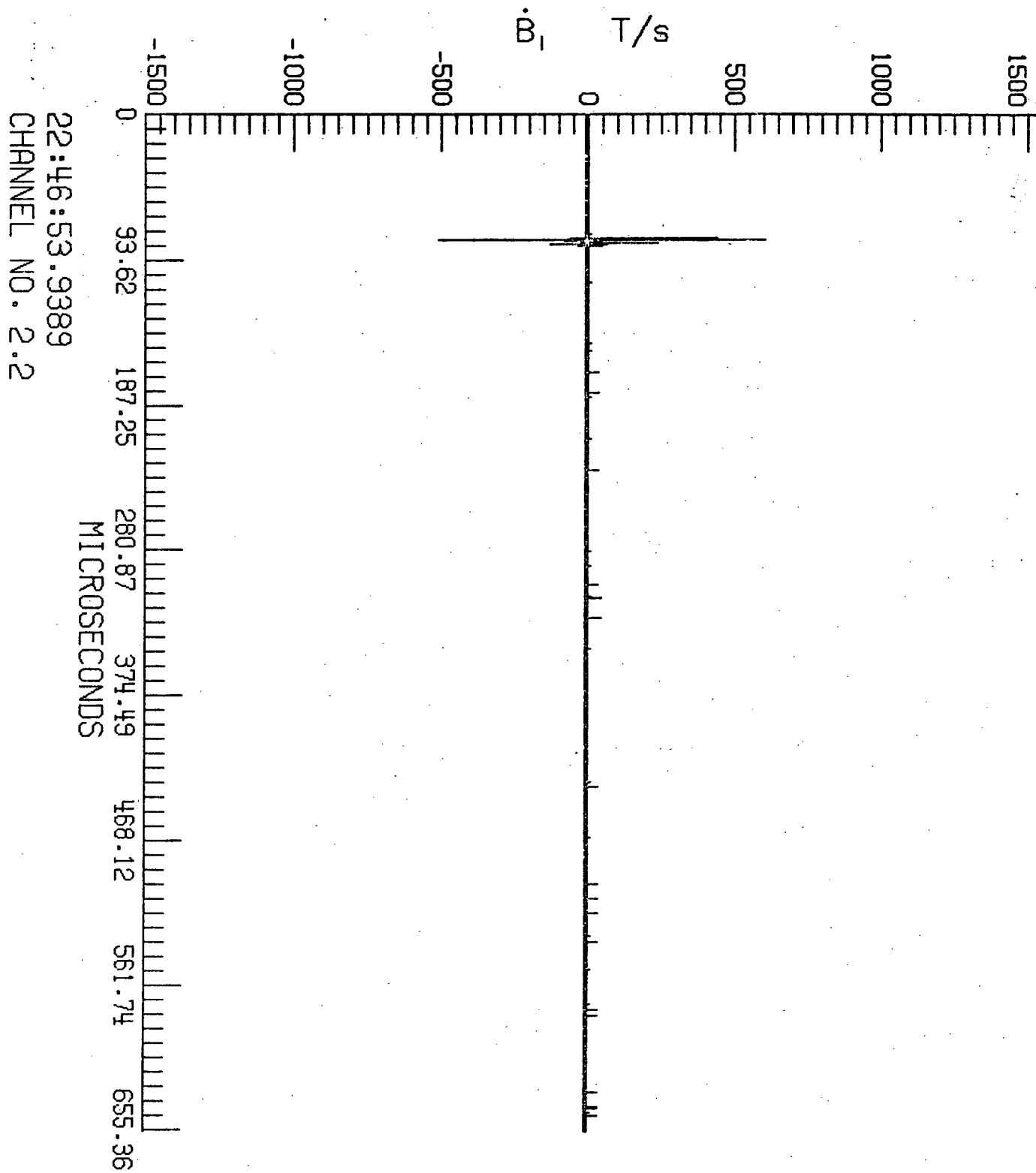


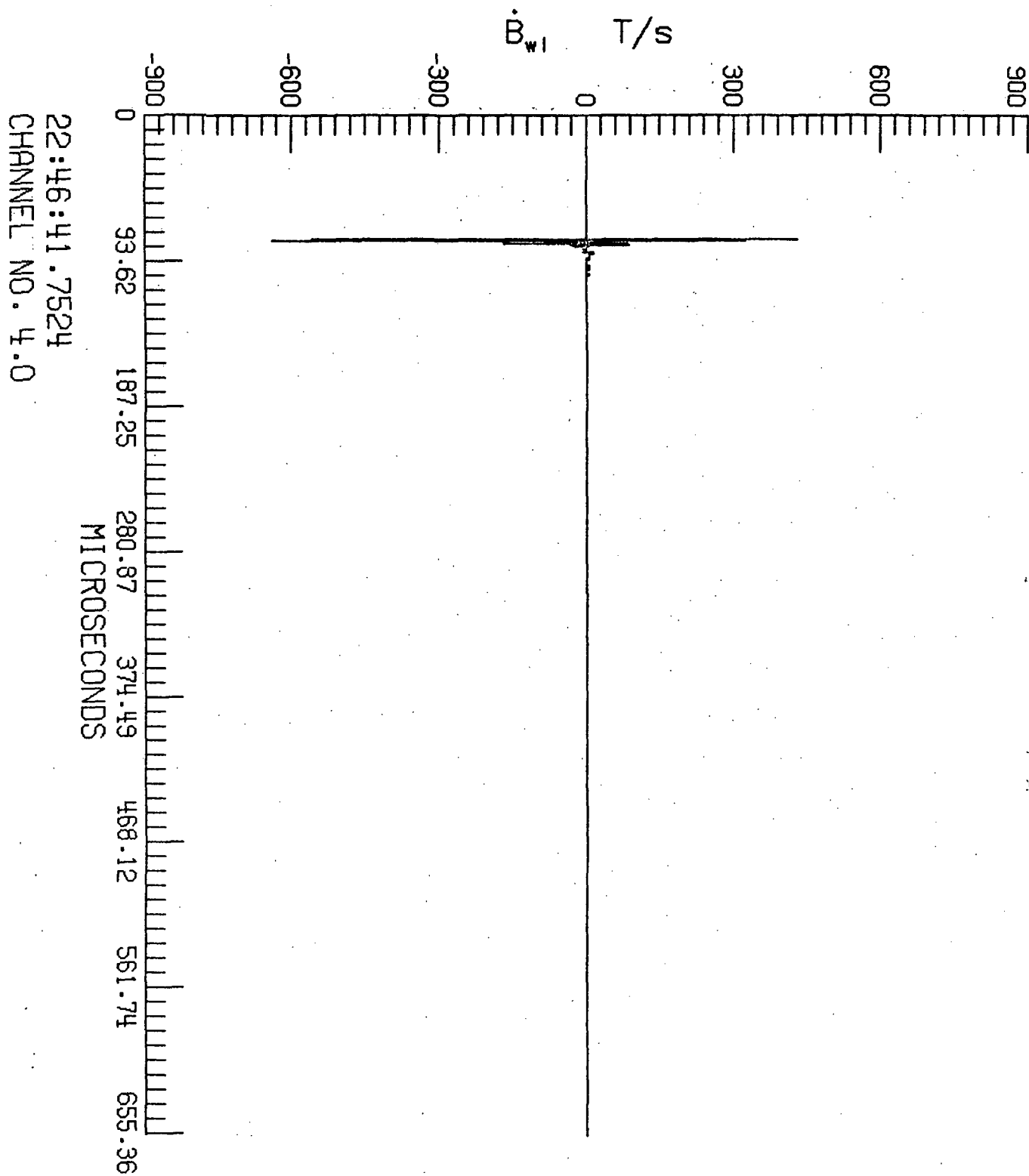






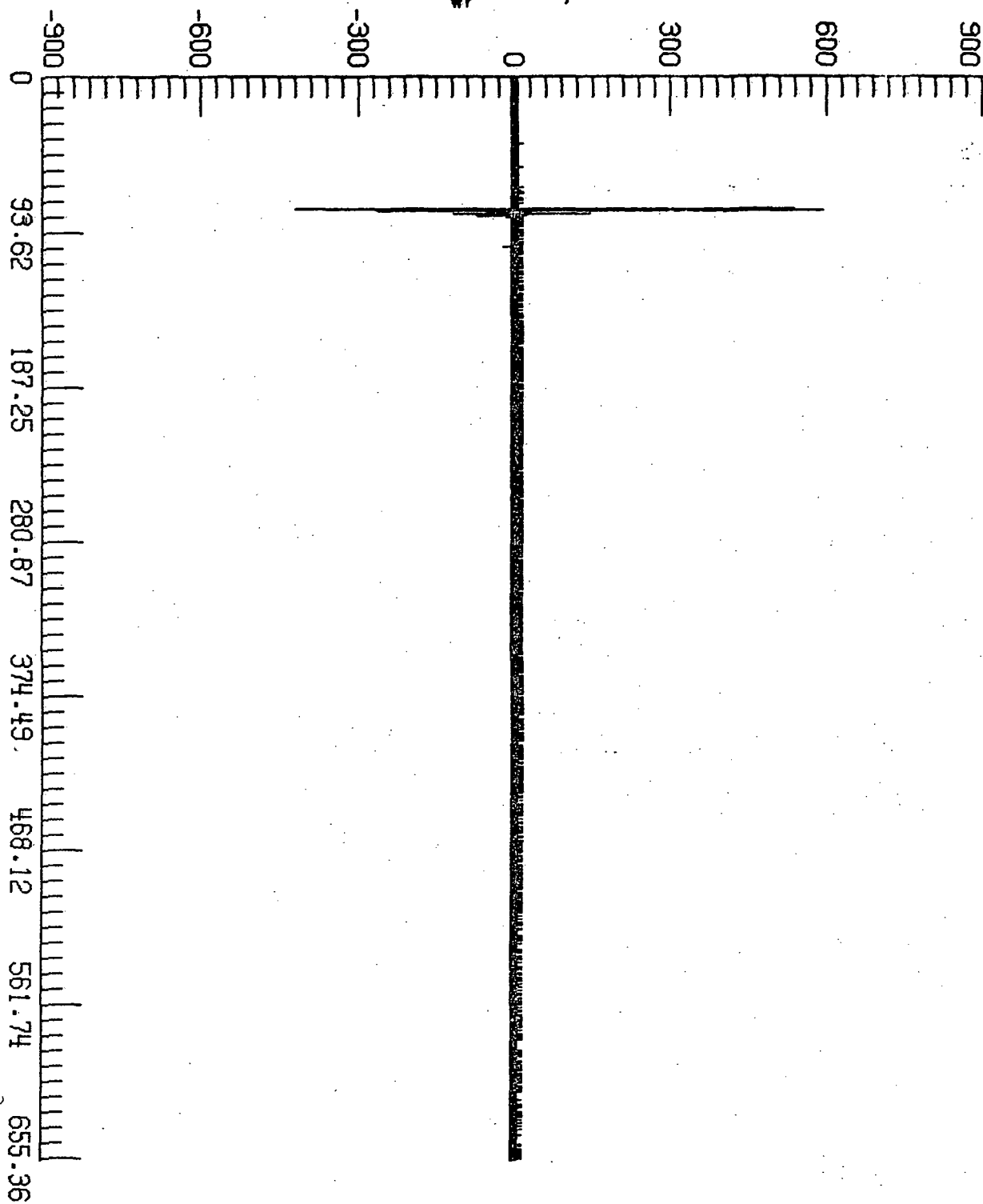




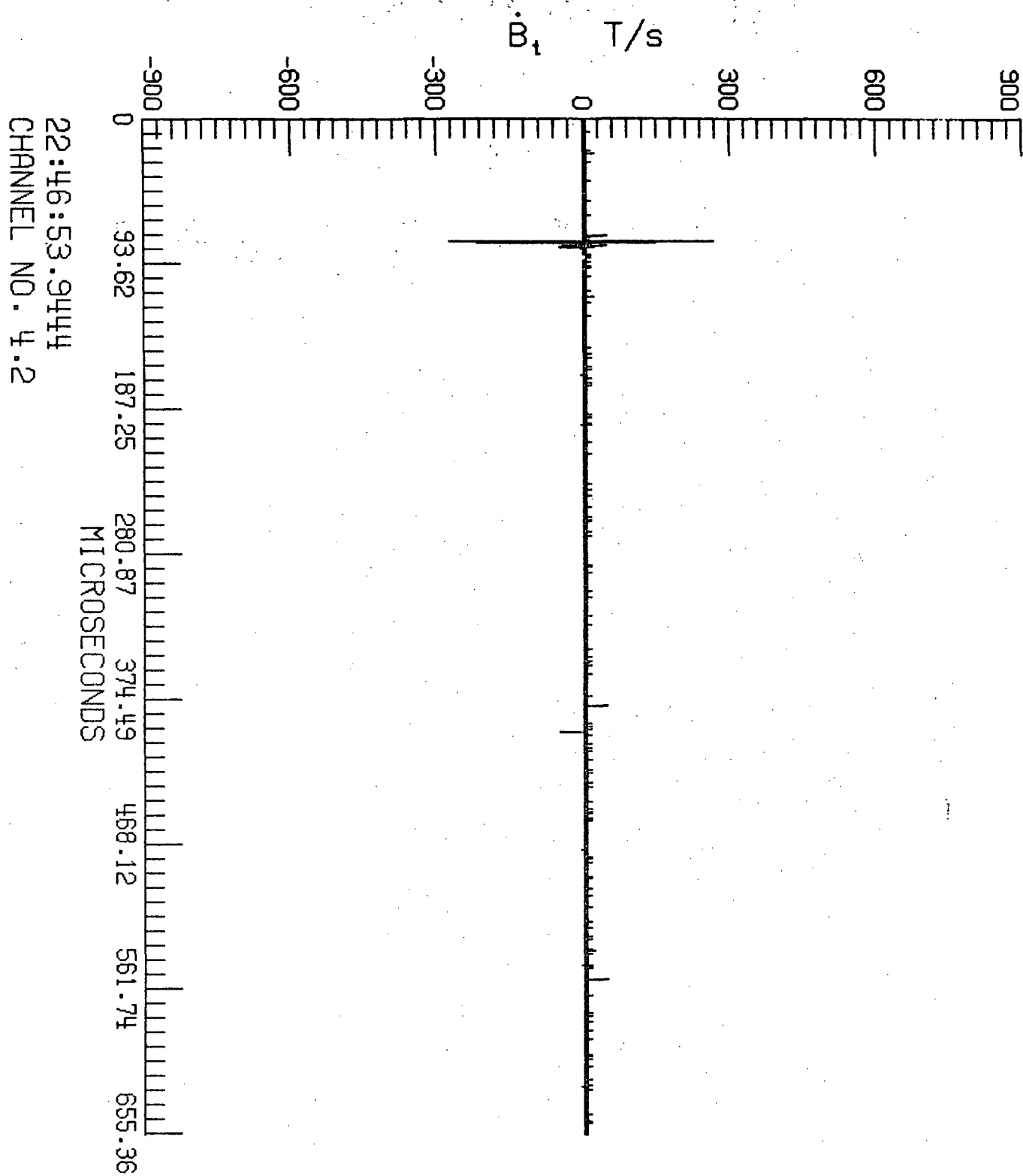


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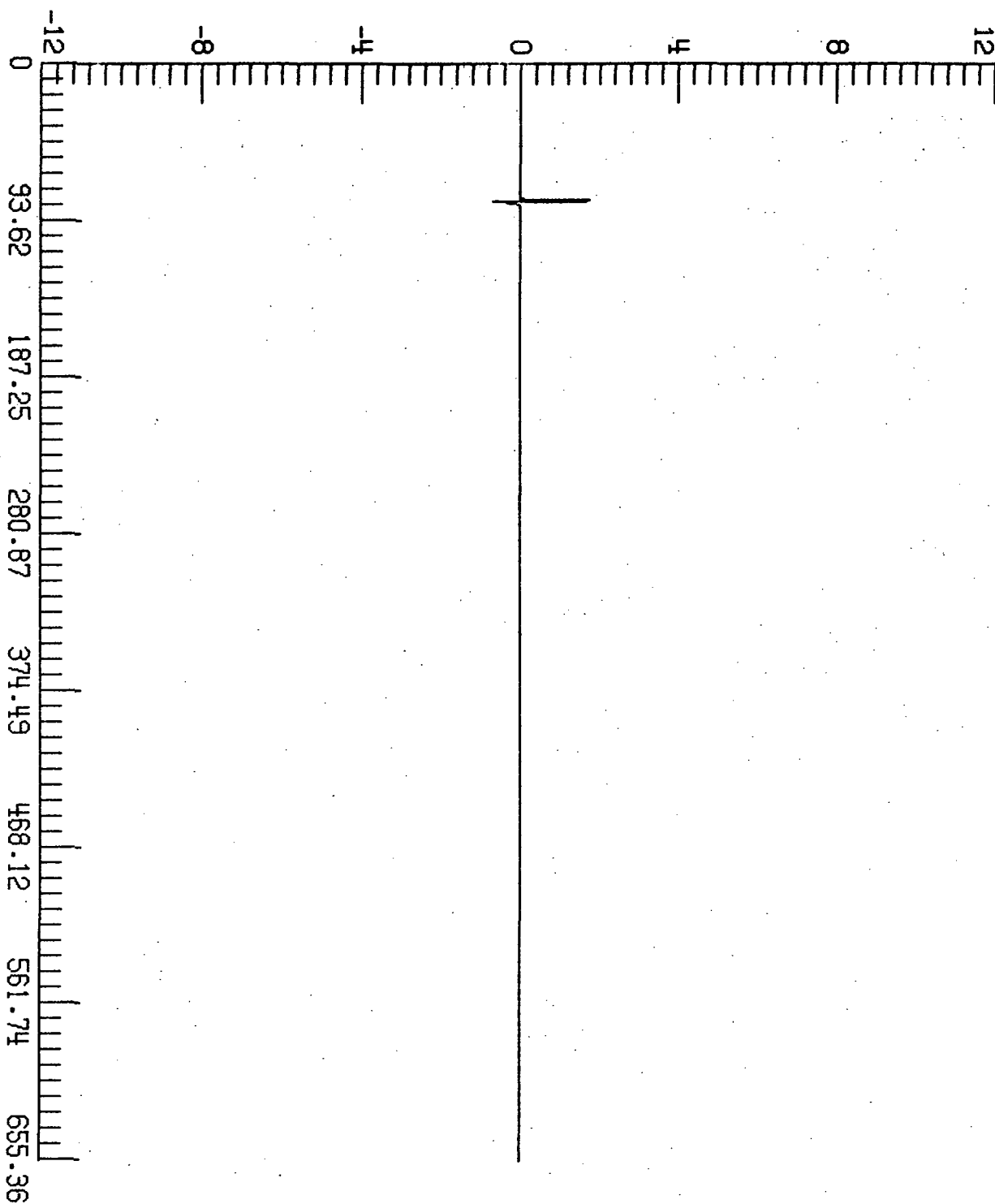




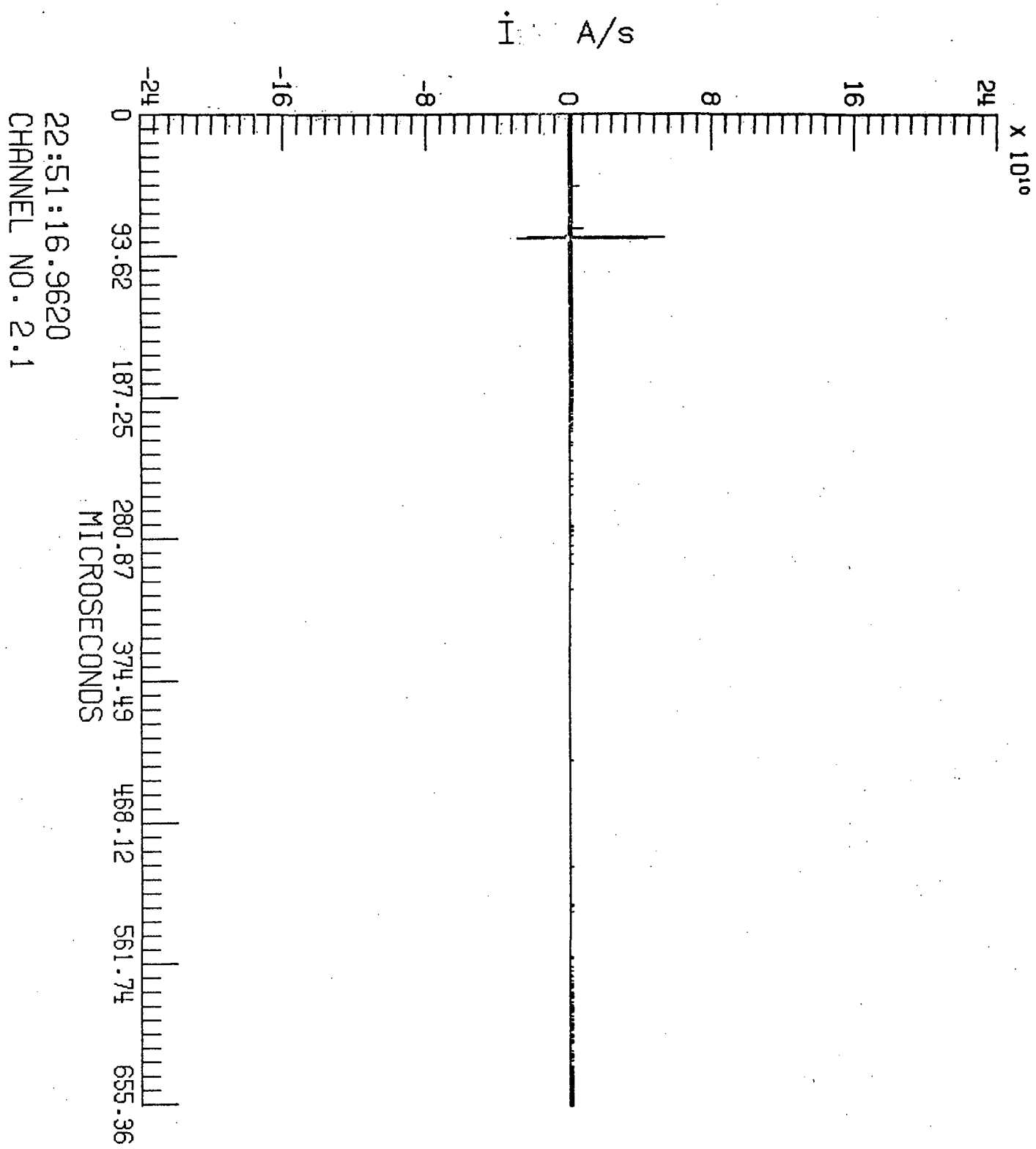
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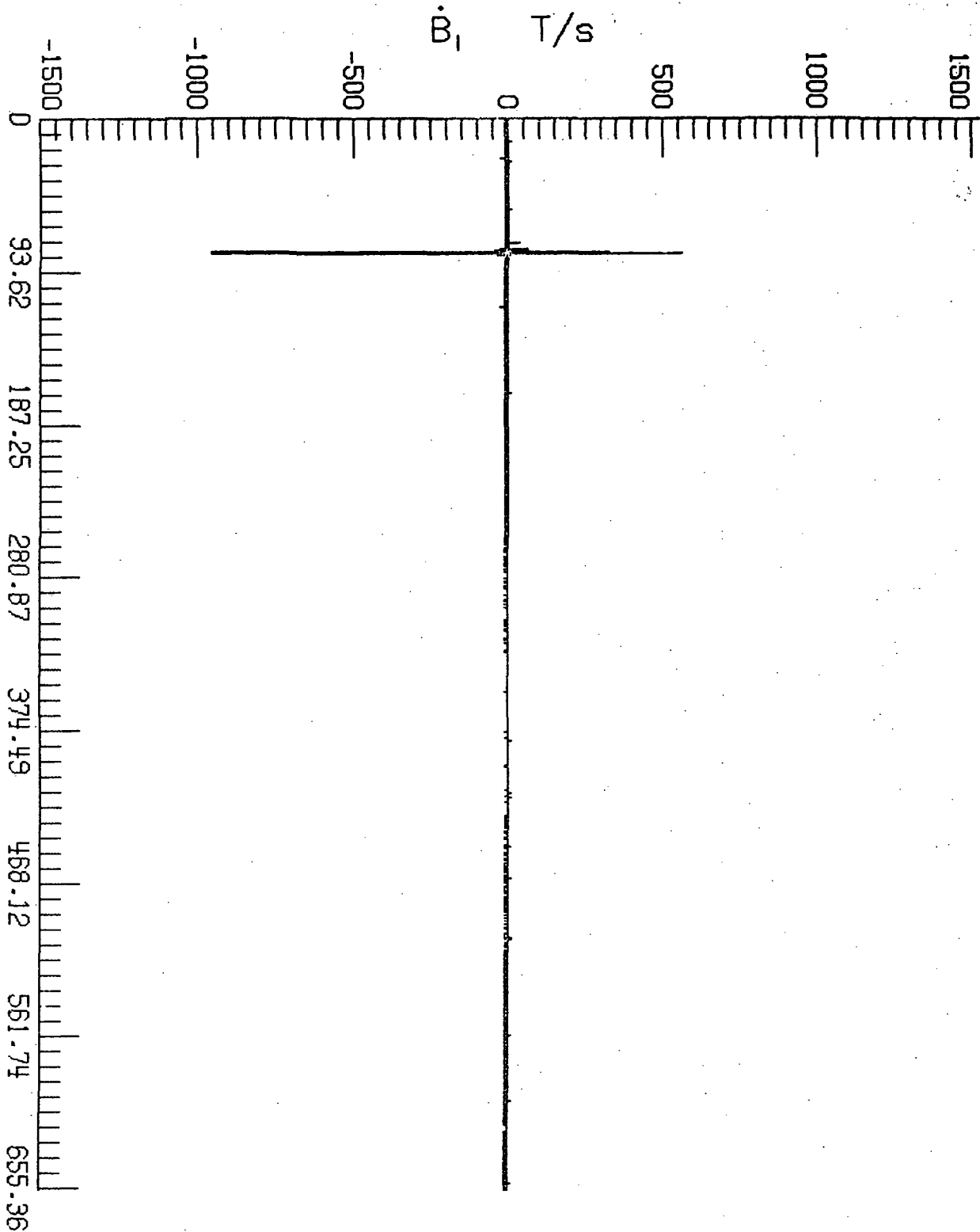
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$\dot{D}_t$  A/m<sup>2</sup>



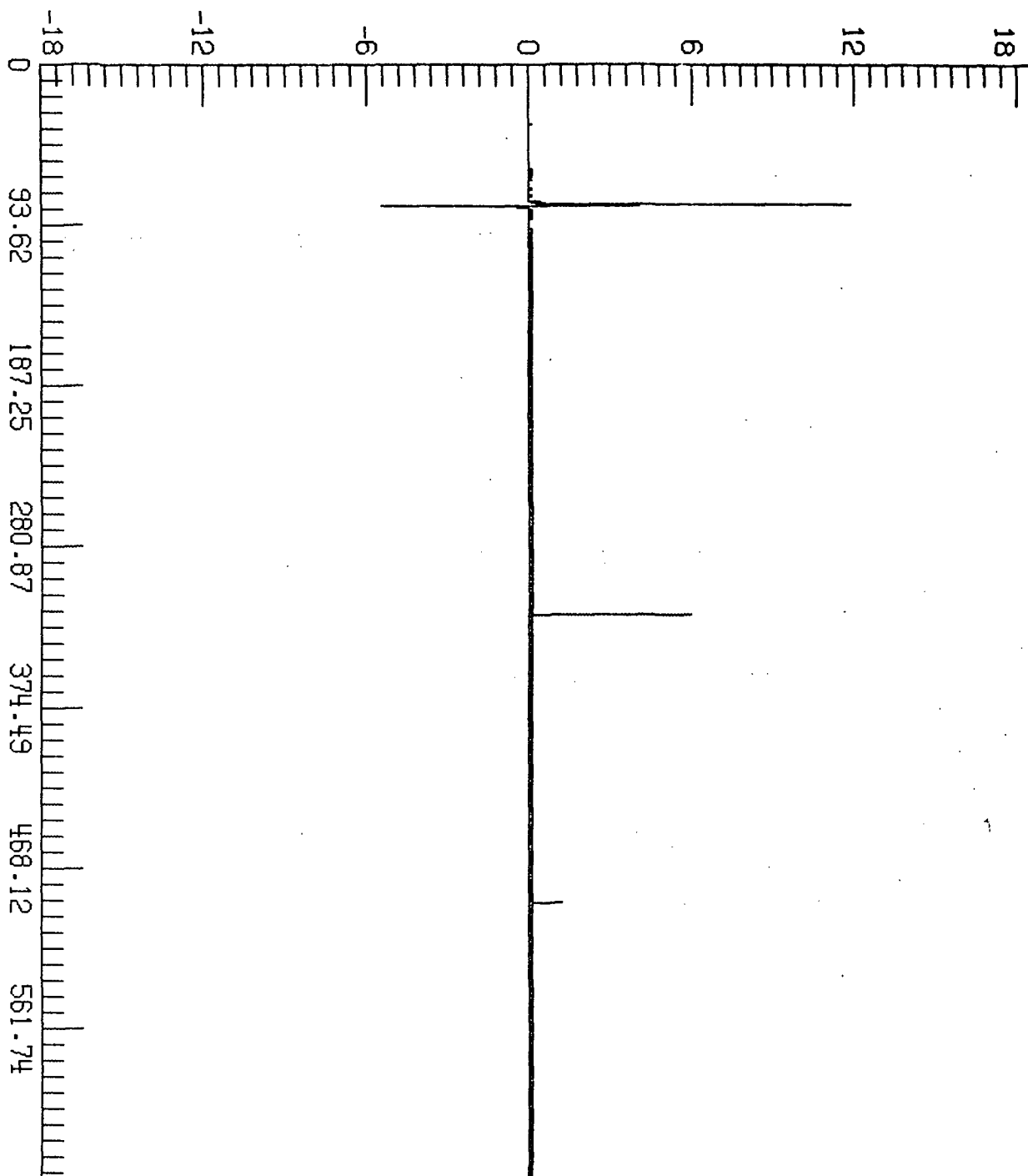
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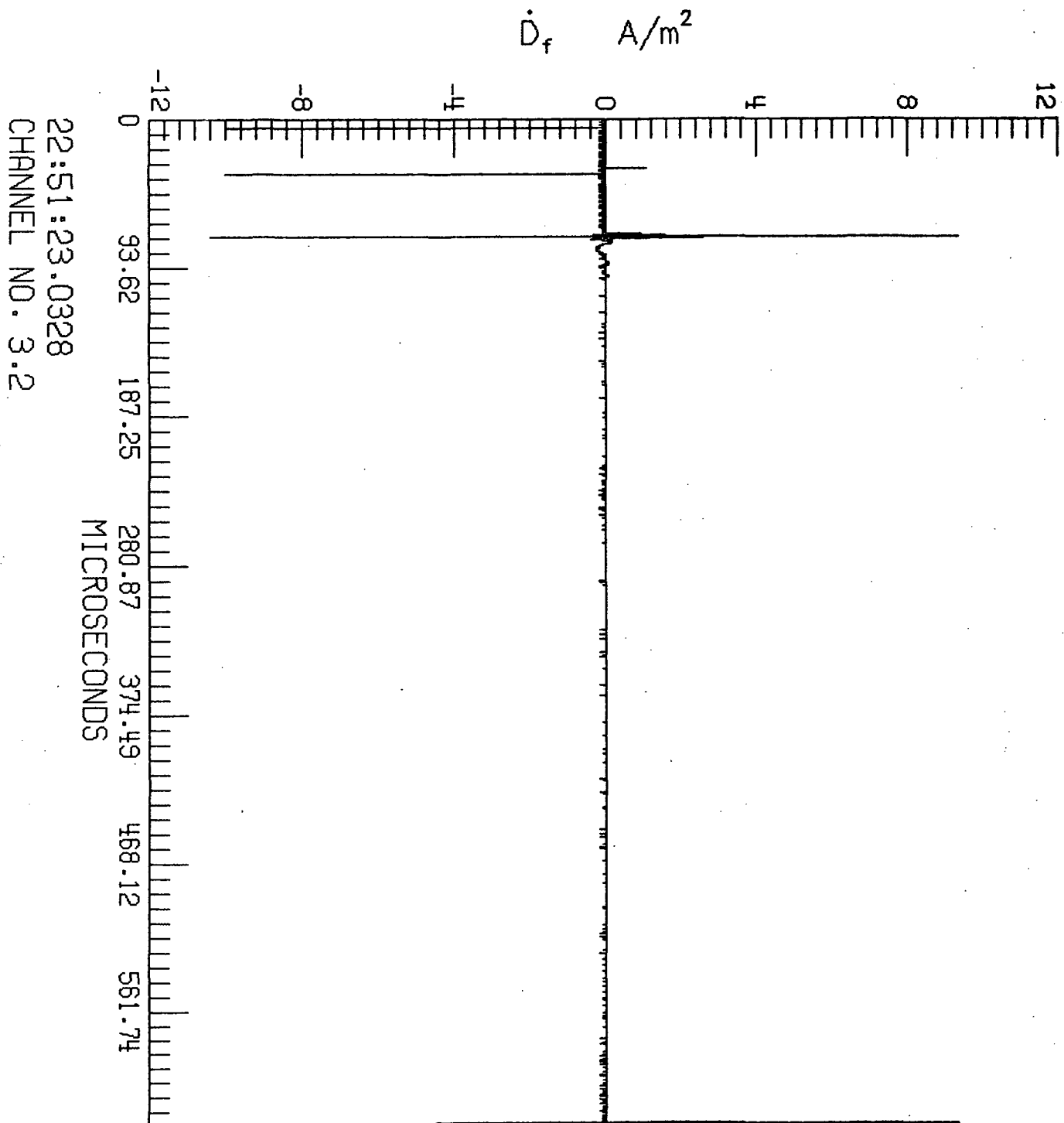
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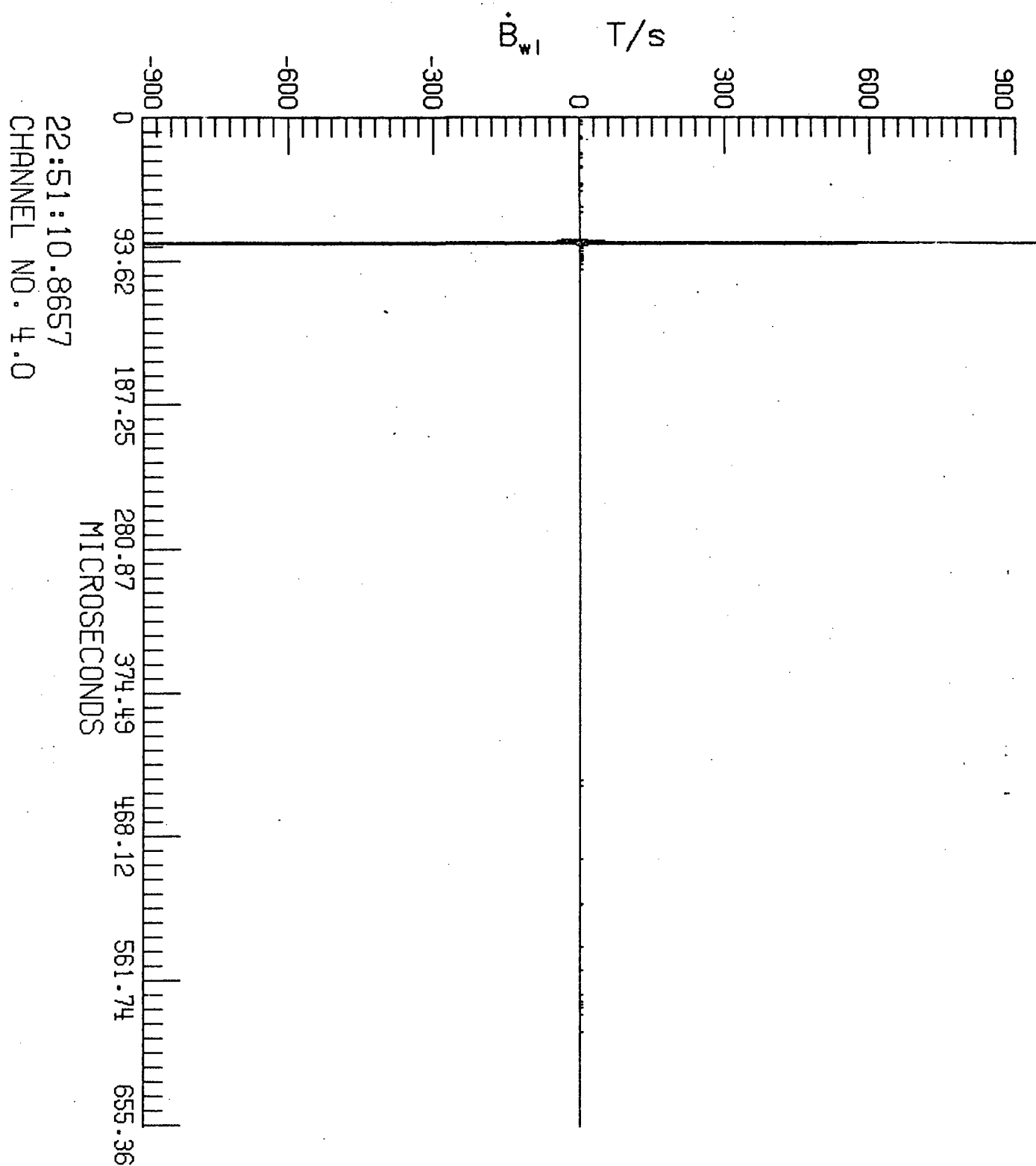


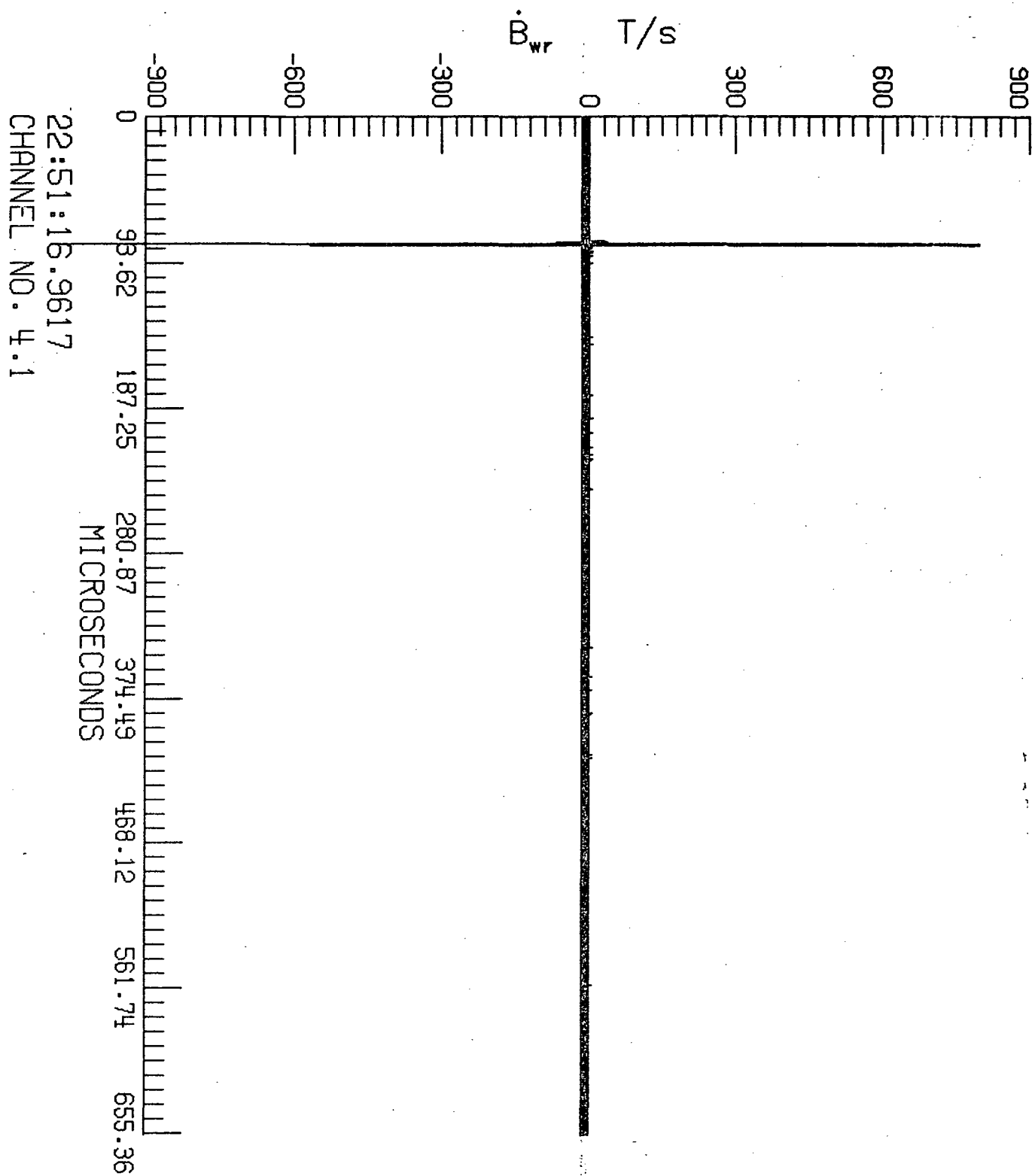
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F106 LIGHTNING/TK.4/M.THOMAS

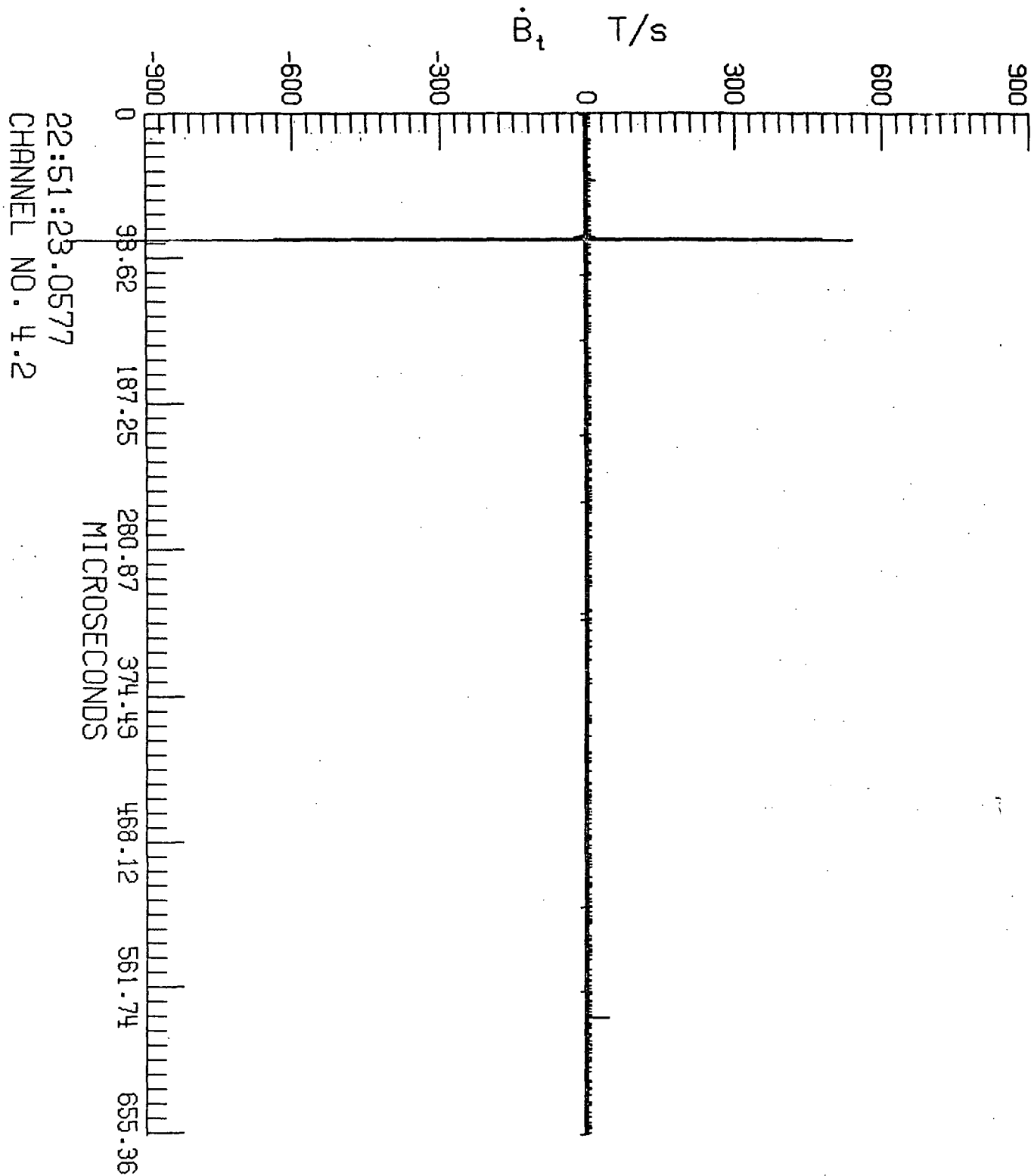
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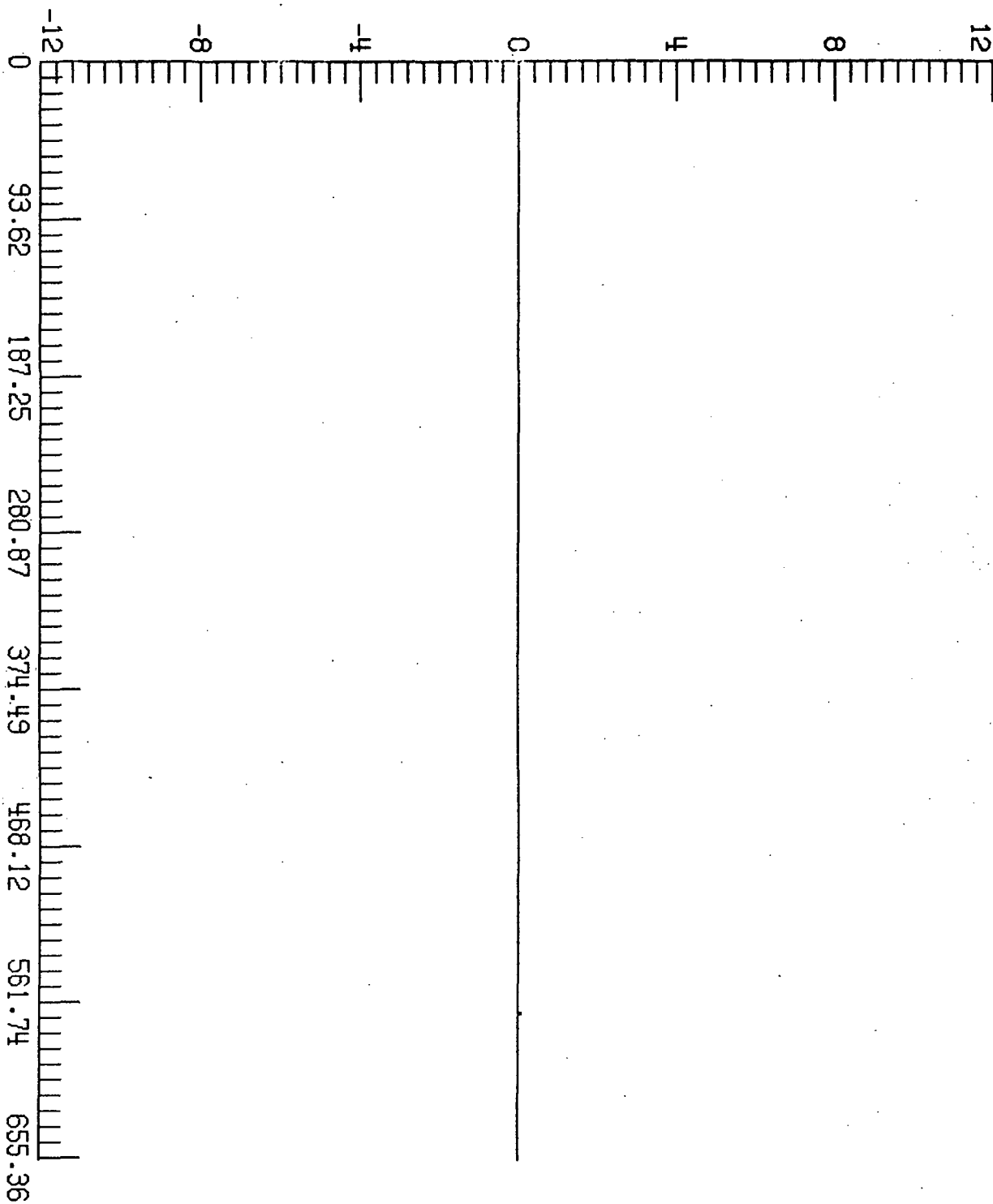




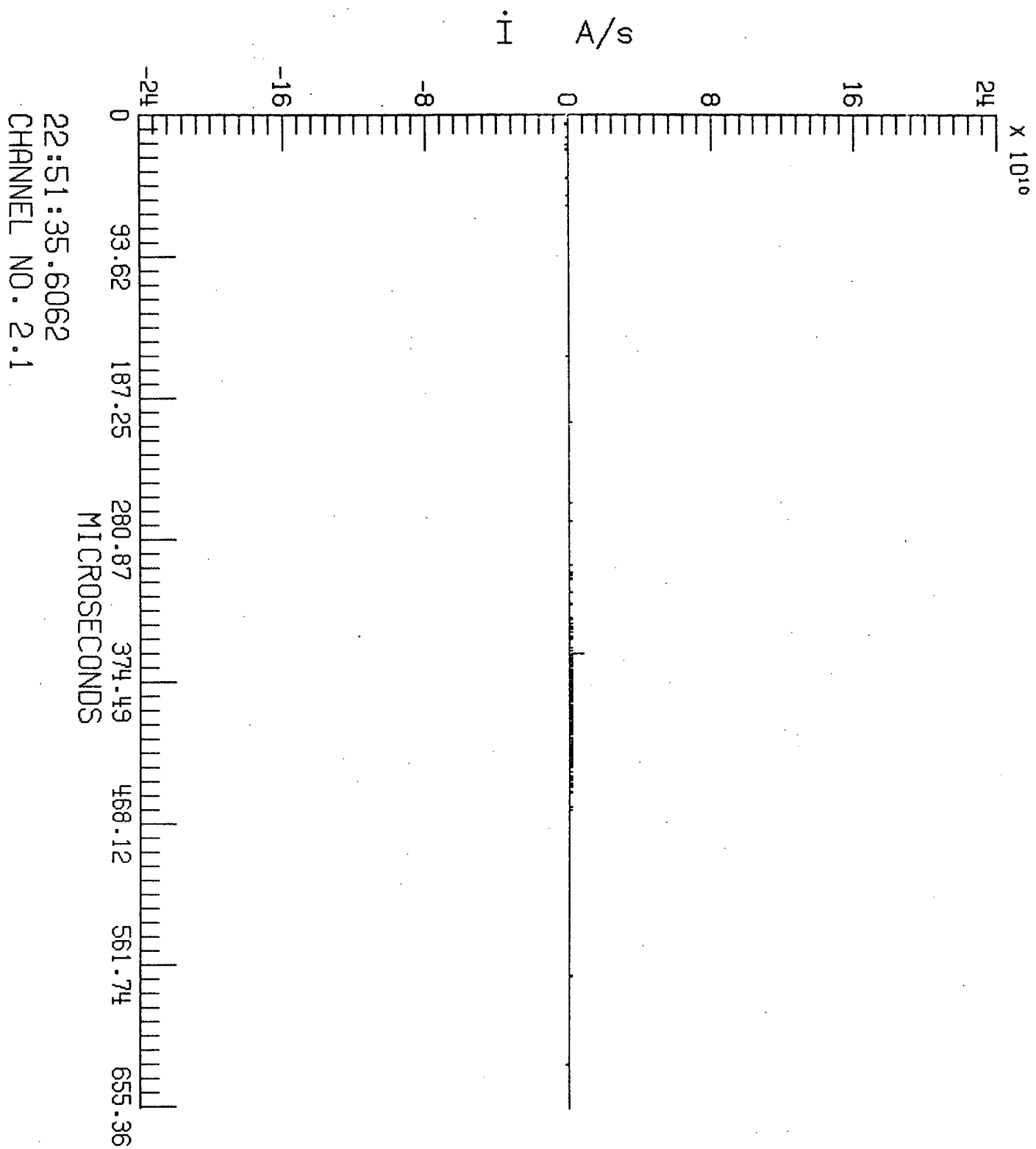


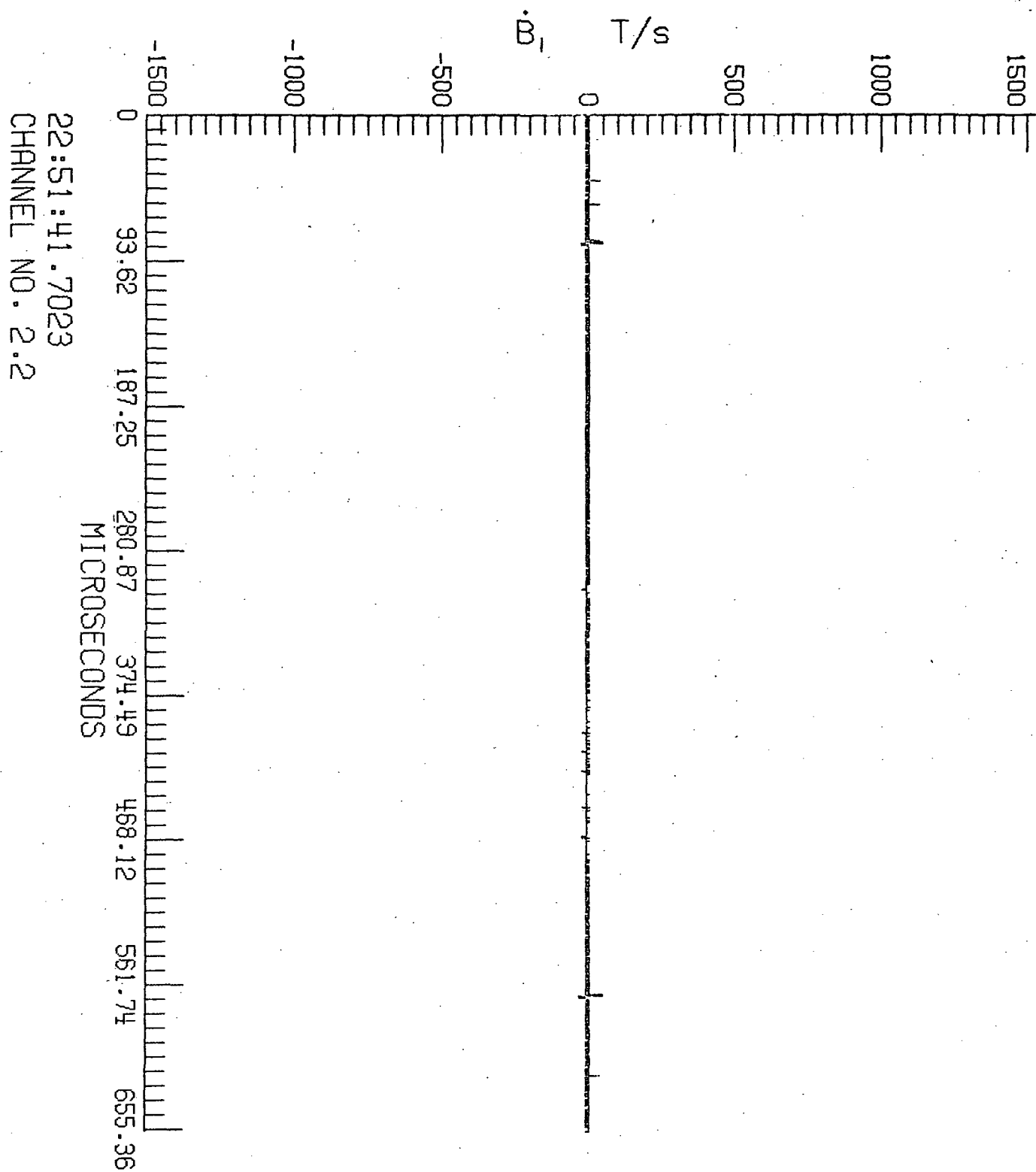


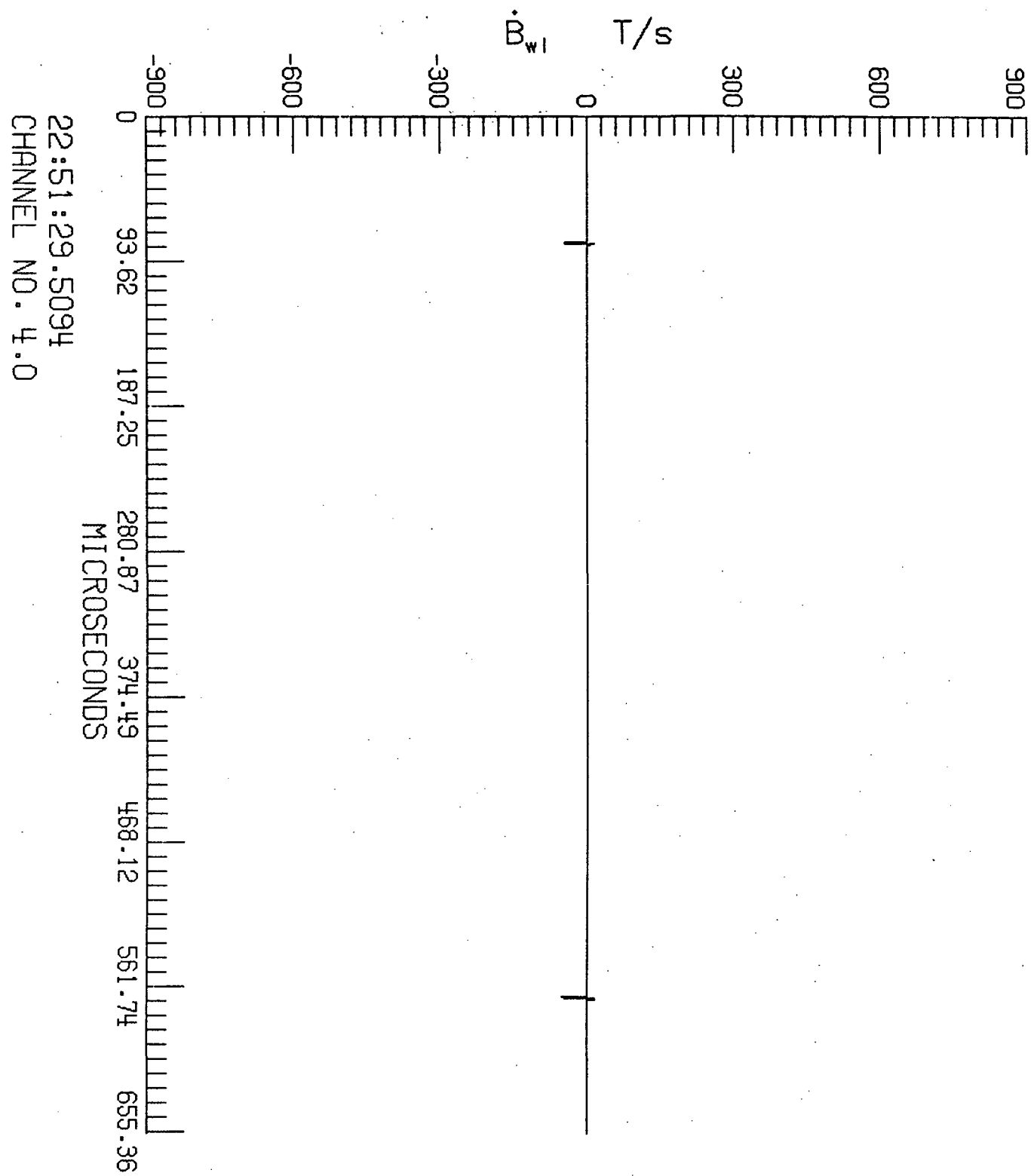
$\dot{D}_t$  A/m<sup>2</sup>

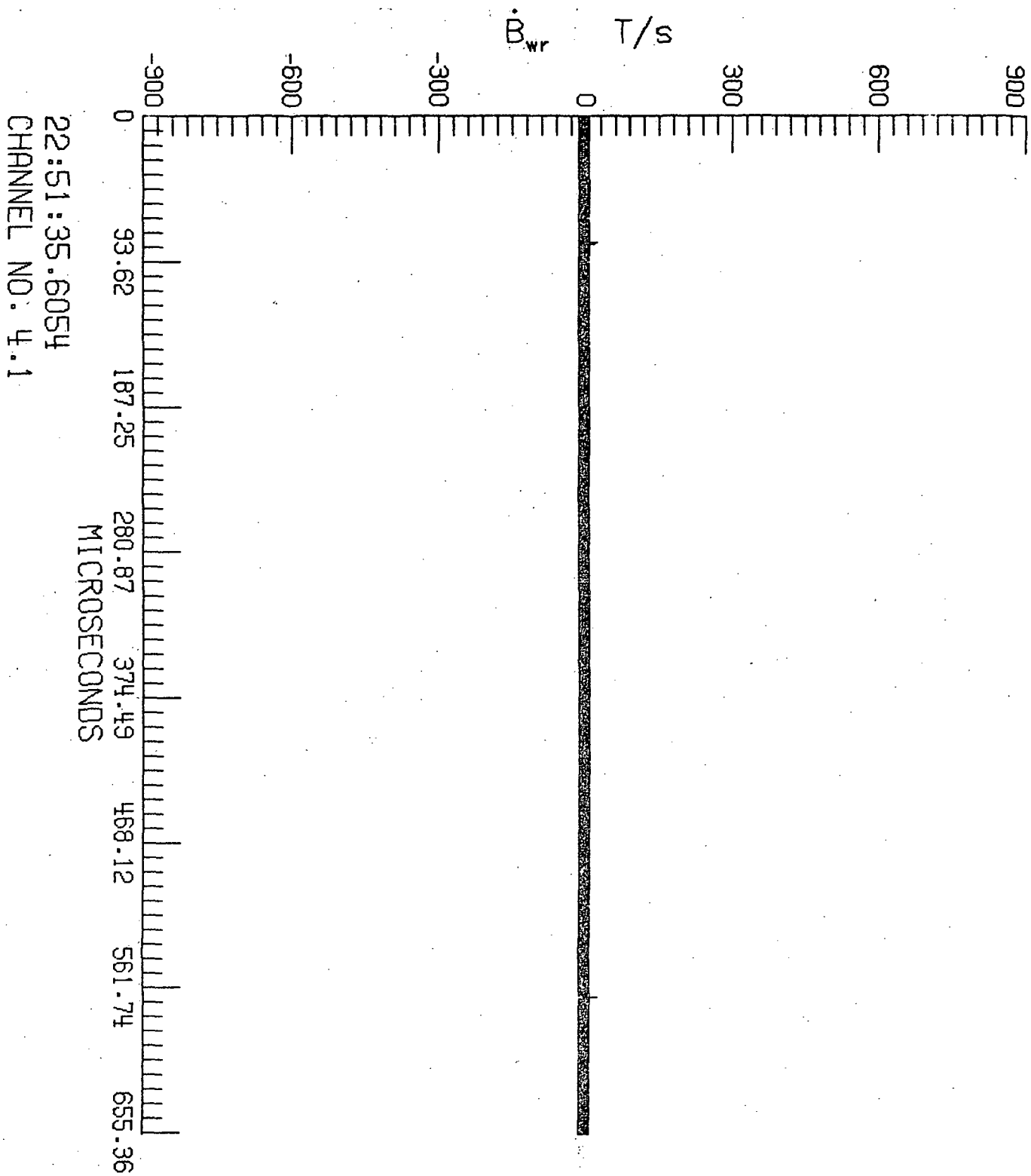


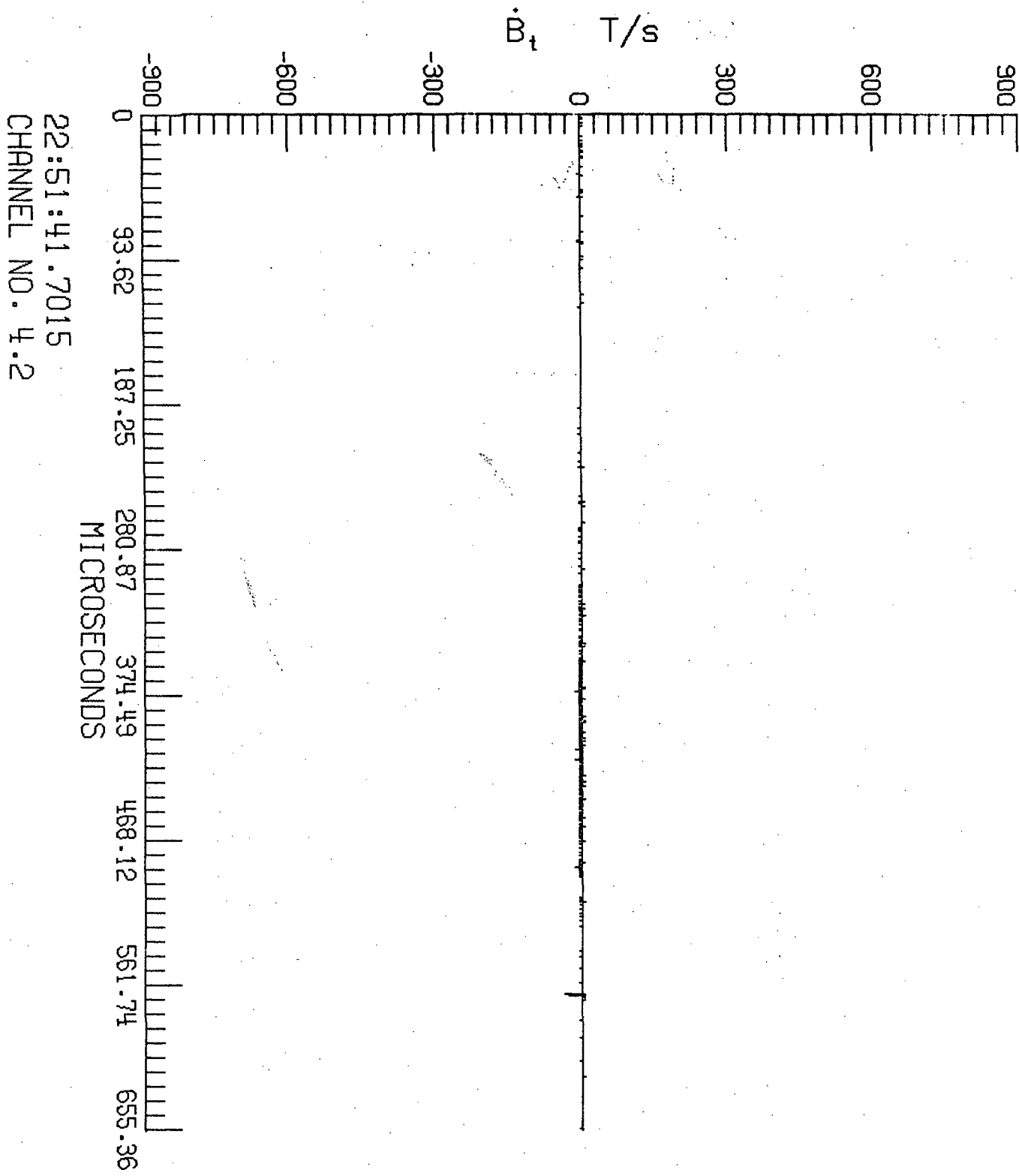
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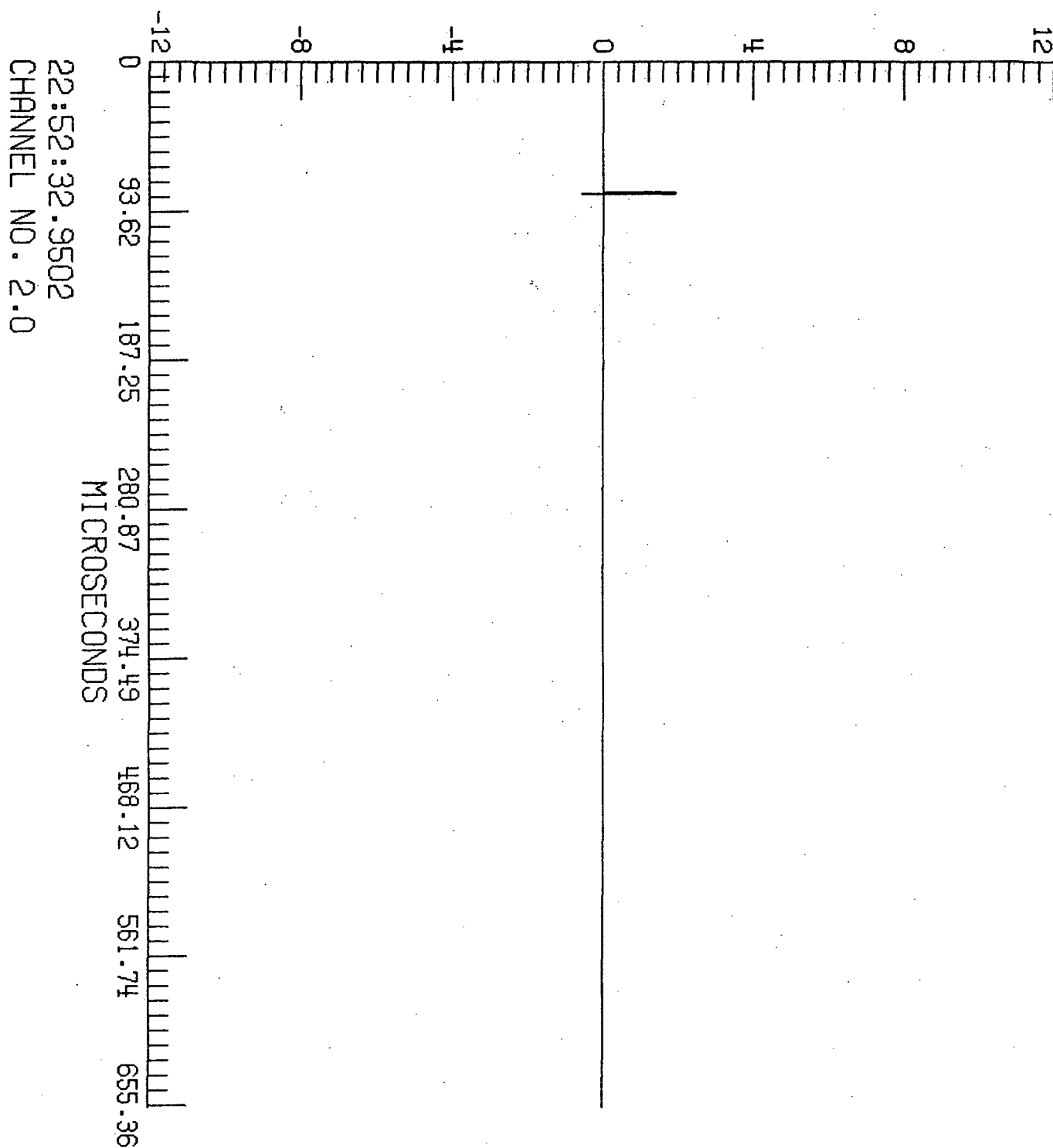




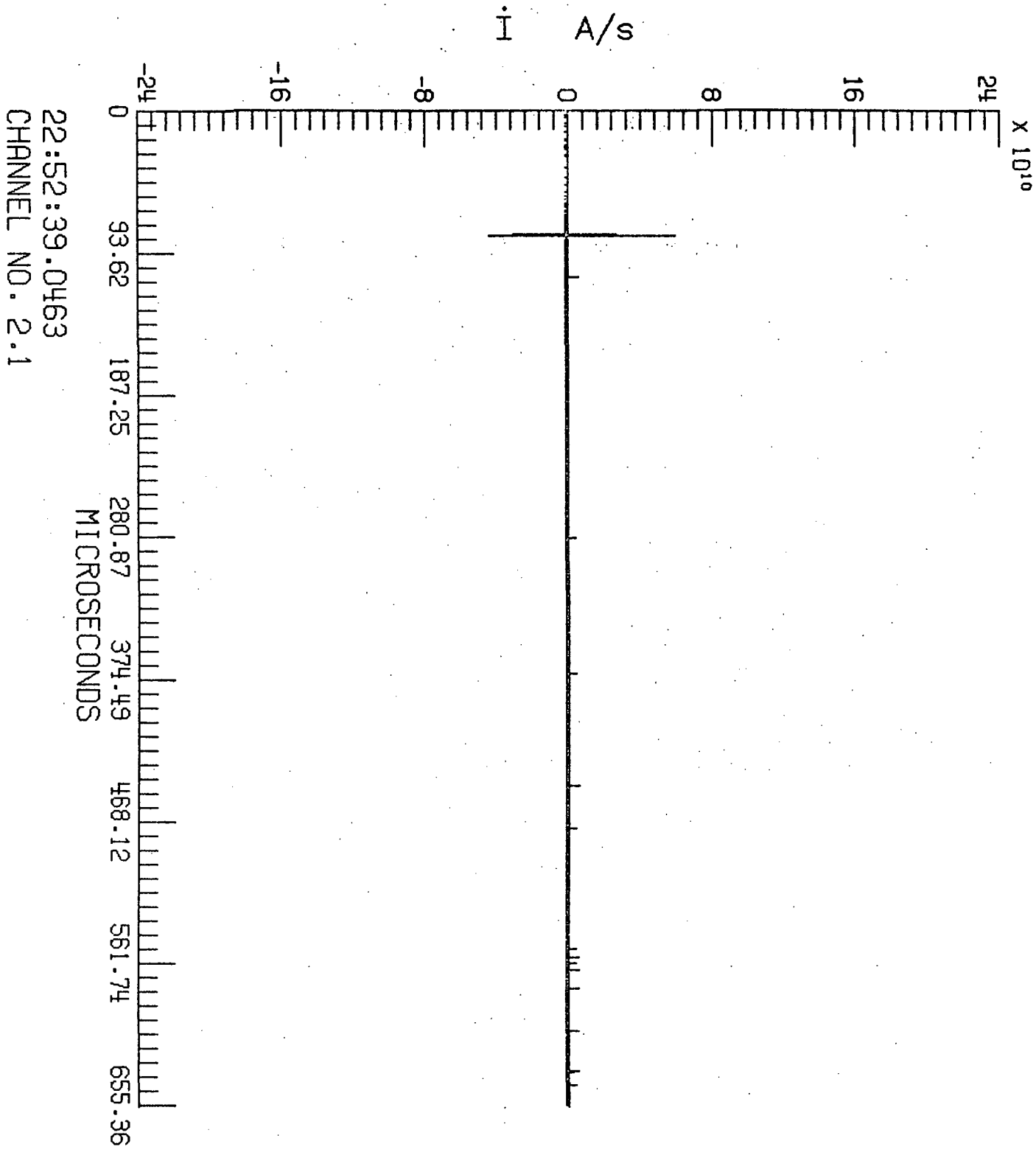
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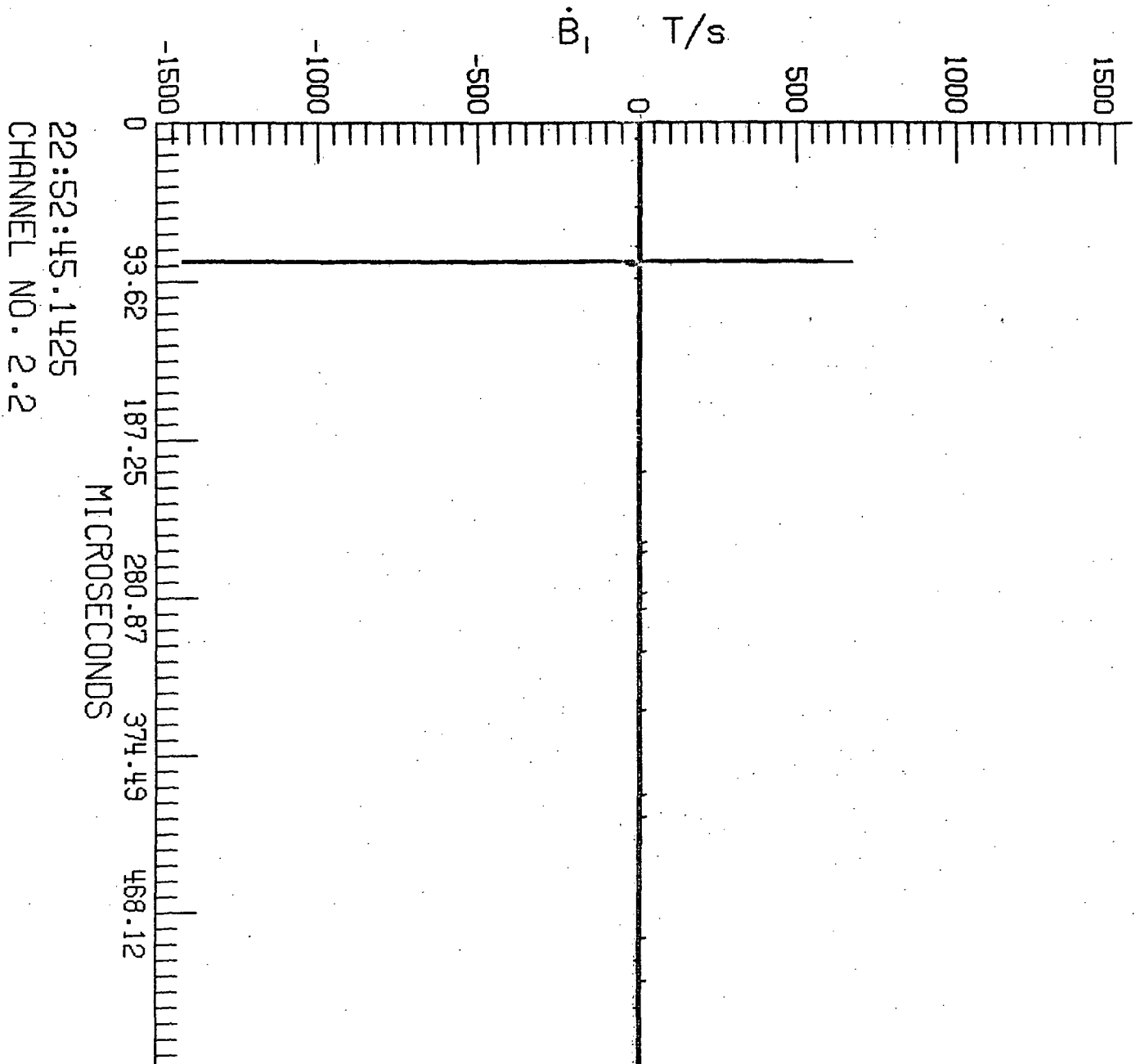
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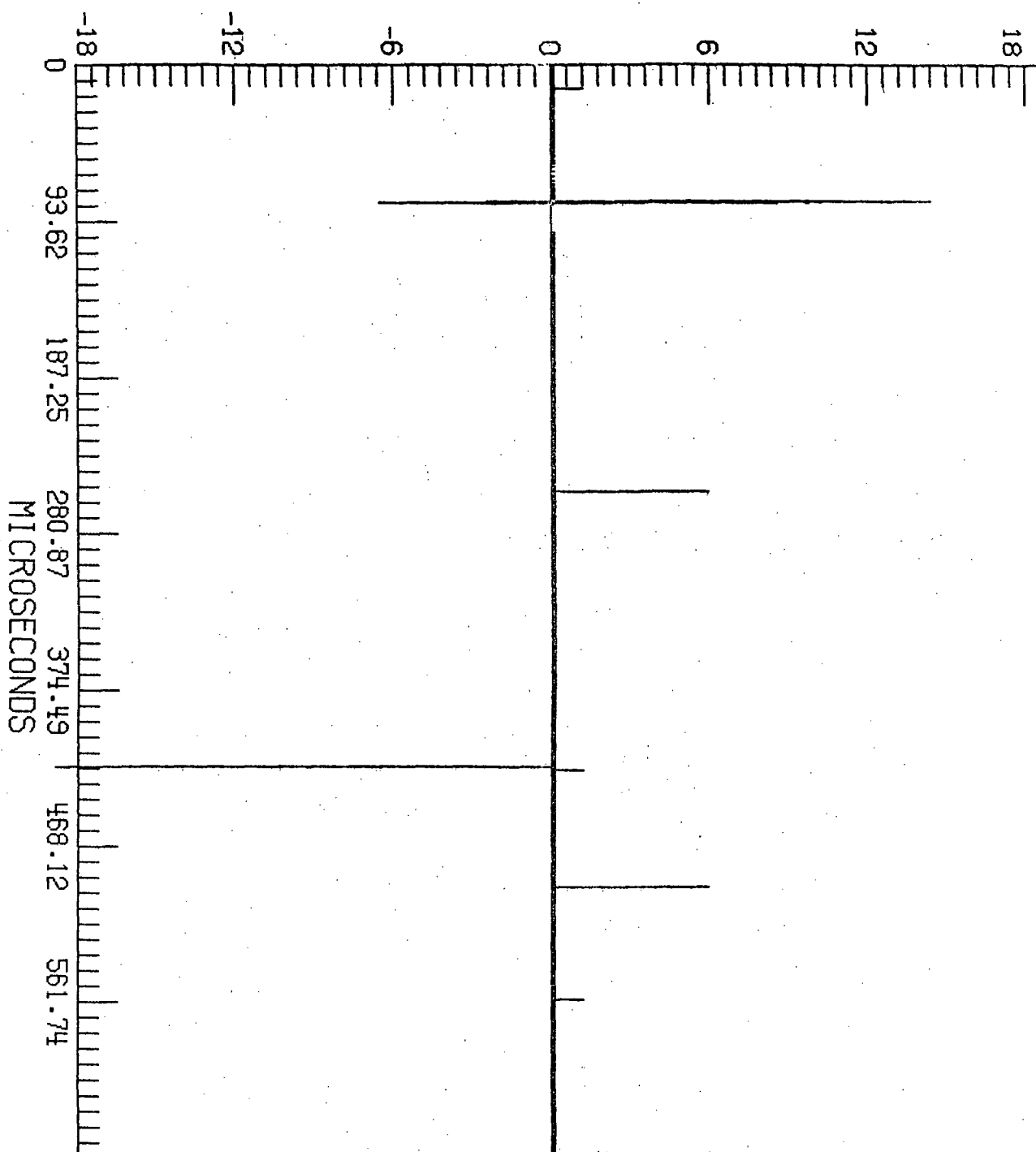






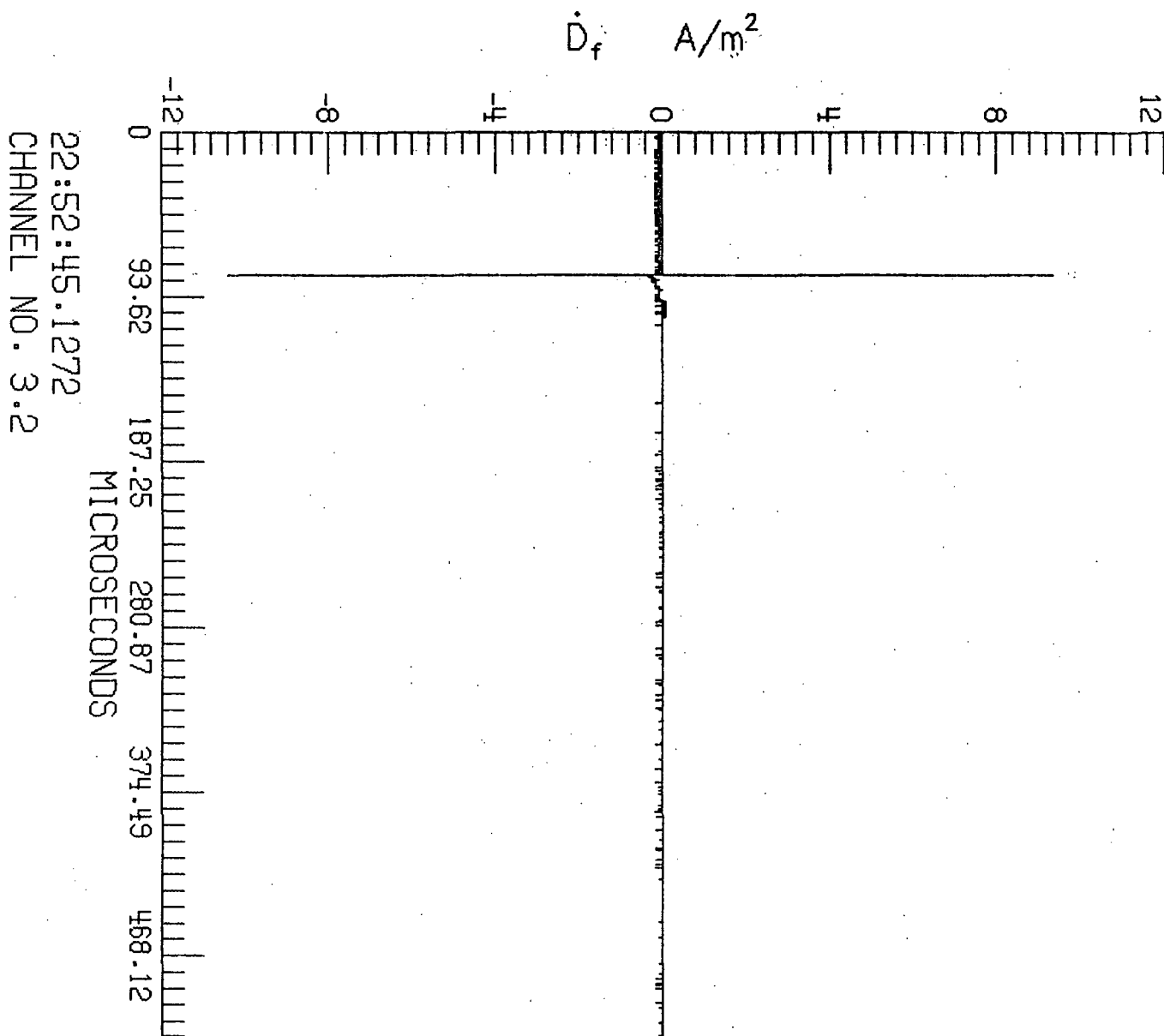


$\dot{D}_{wl}$   $A/m^2$



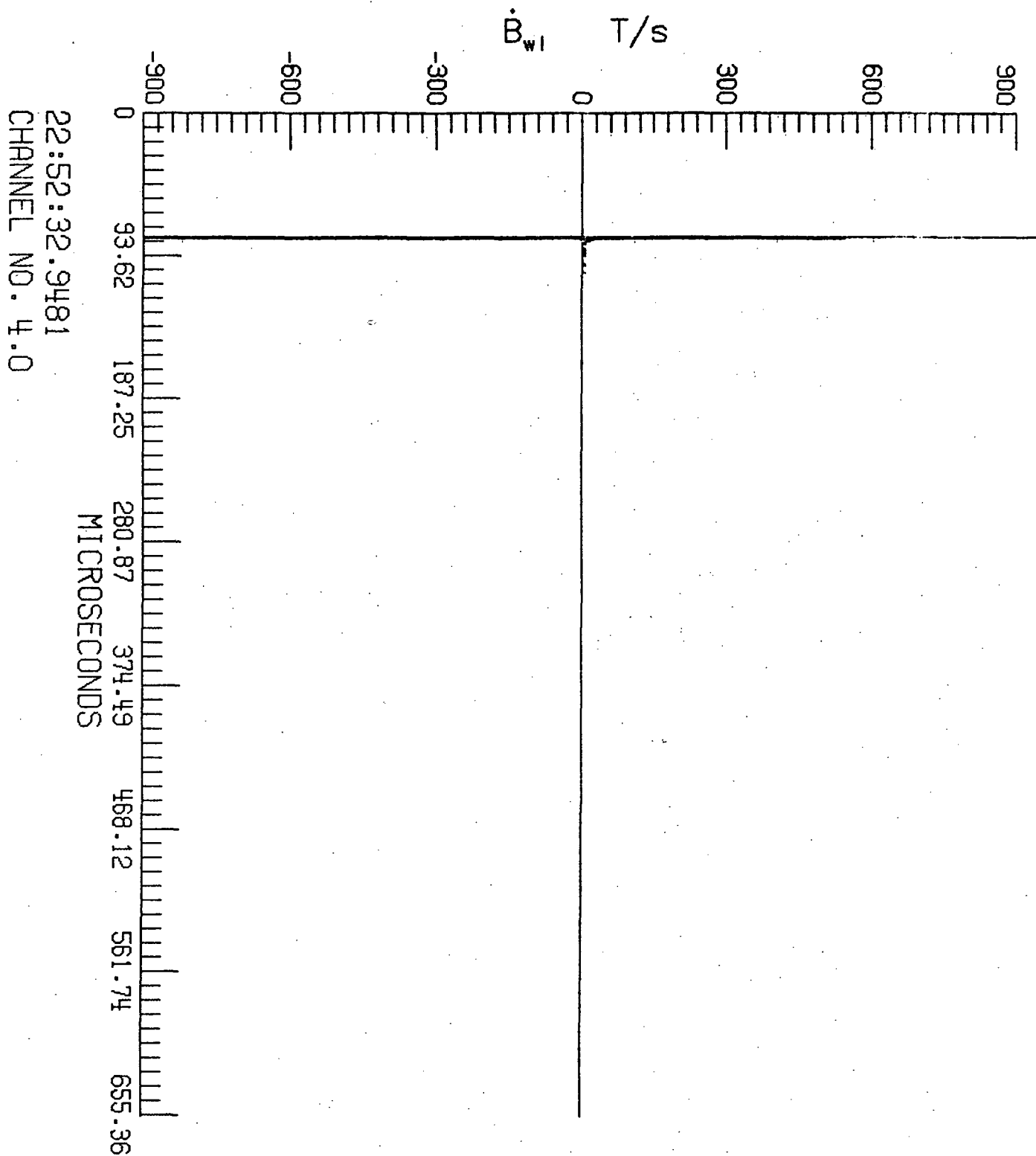
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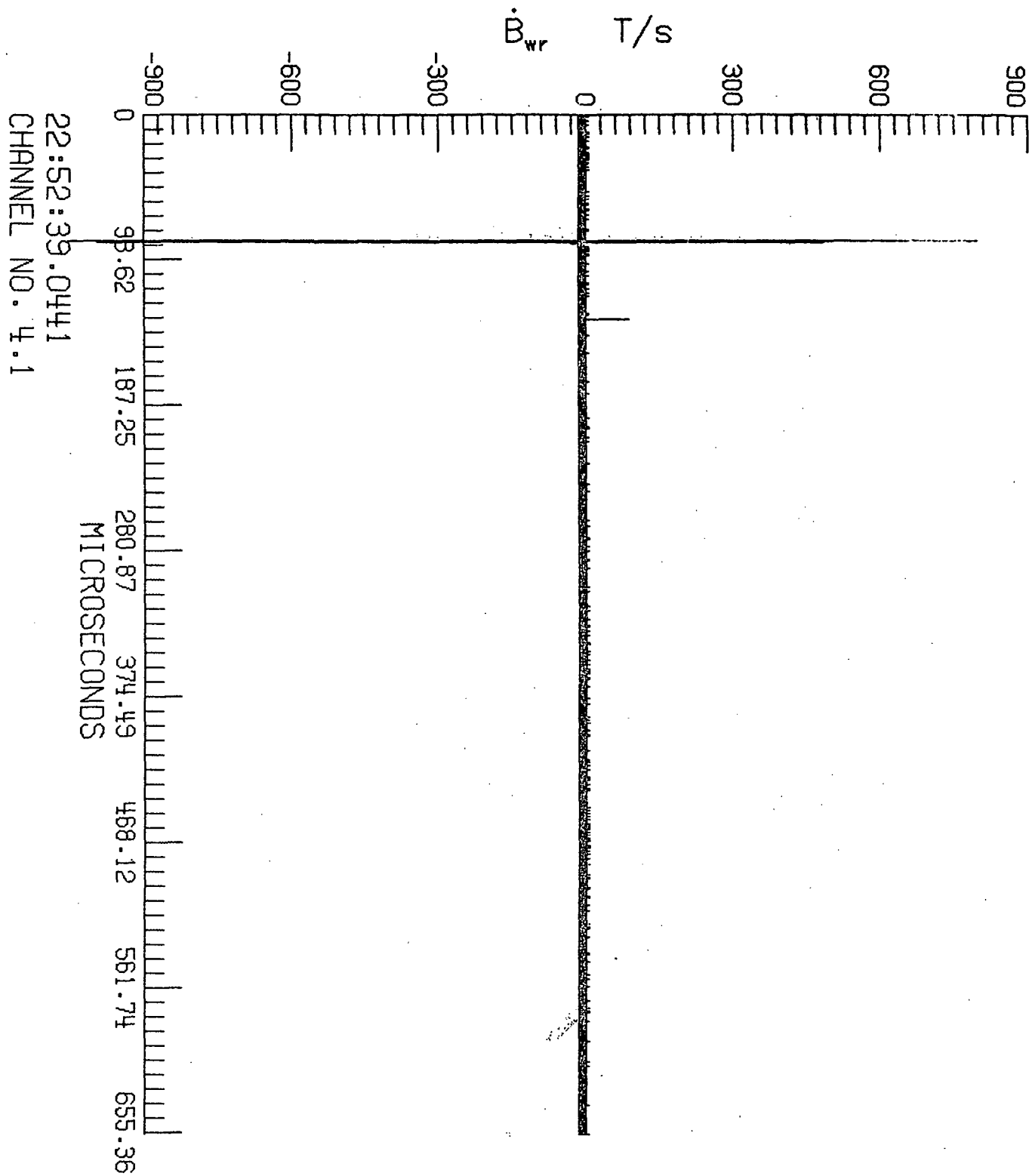
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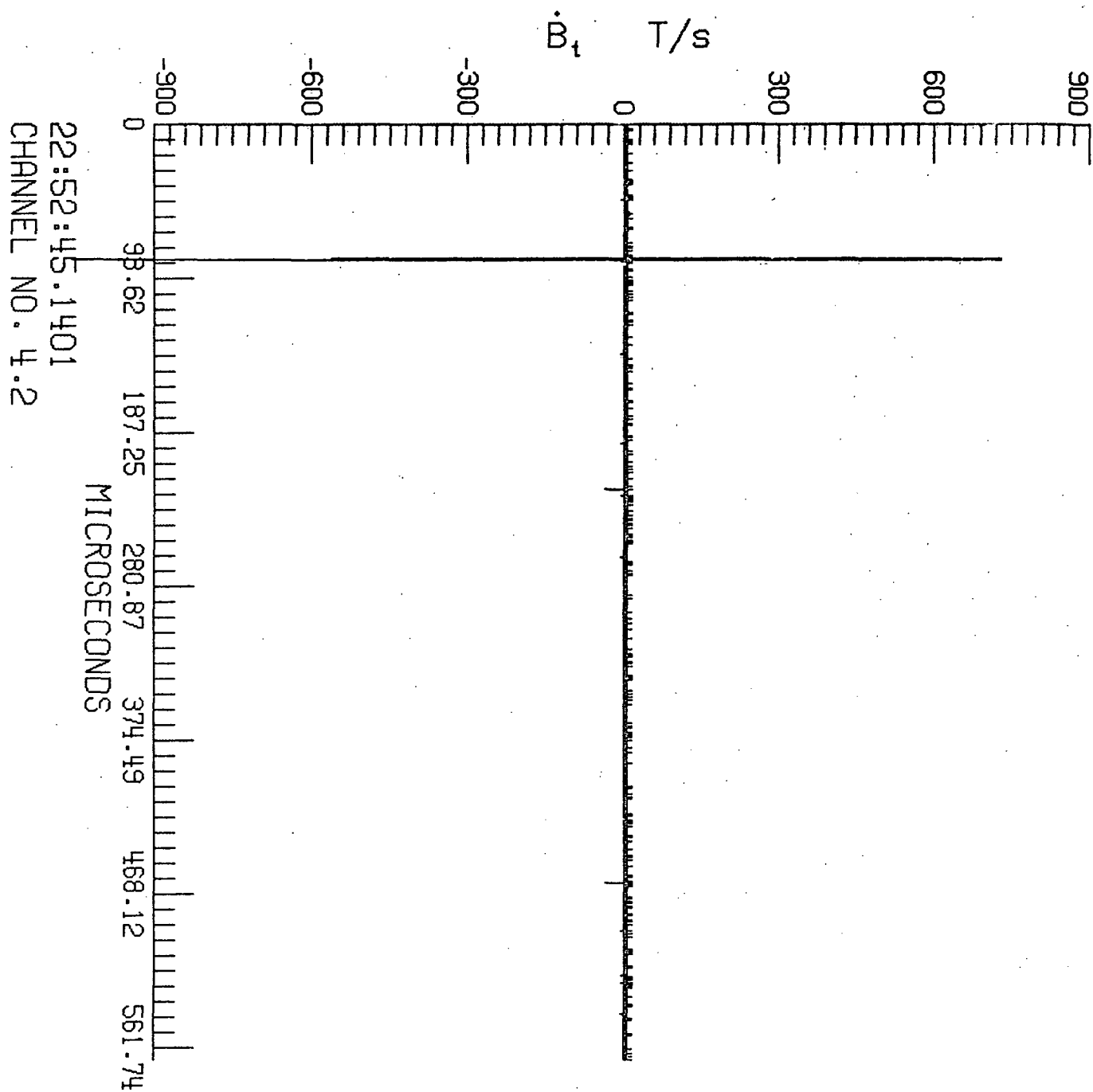


F106 LIGHTNING/TK.5/M.THOMAS

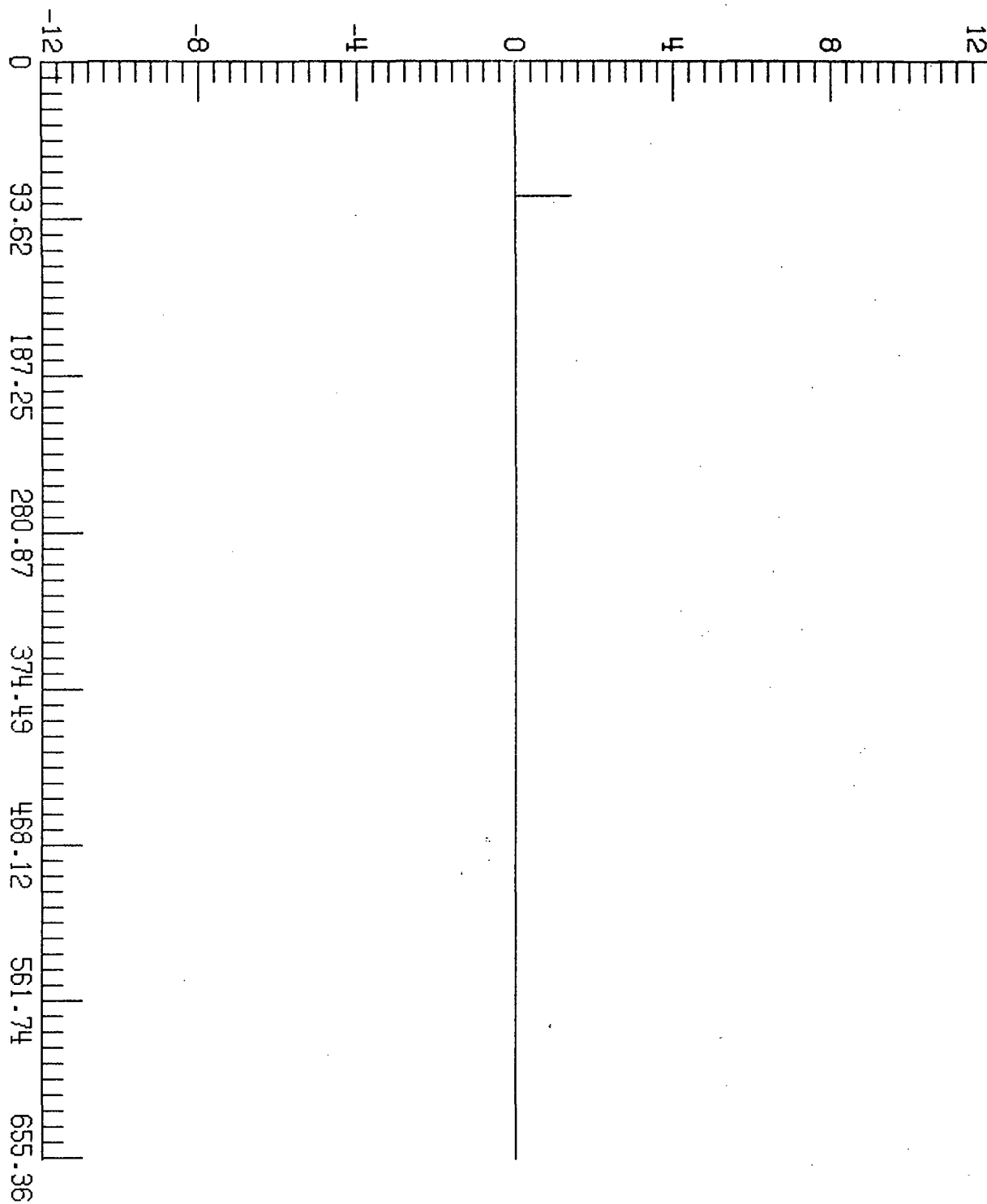
TEST NO. 83-







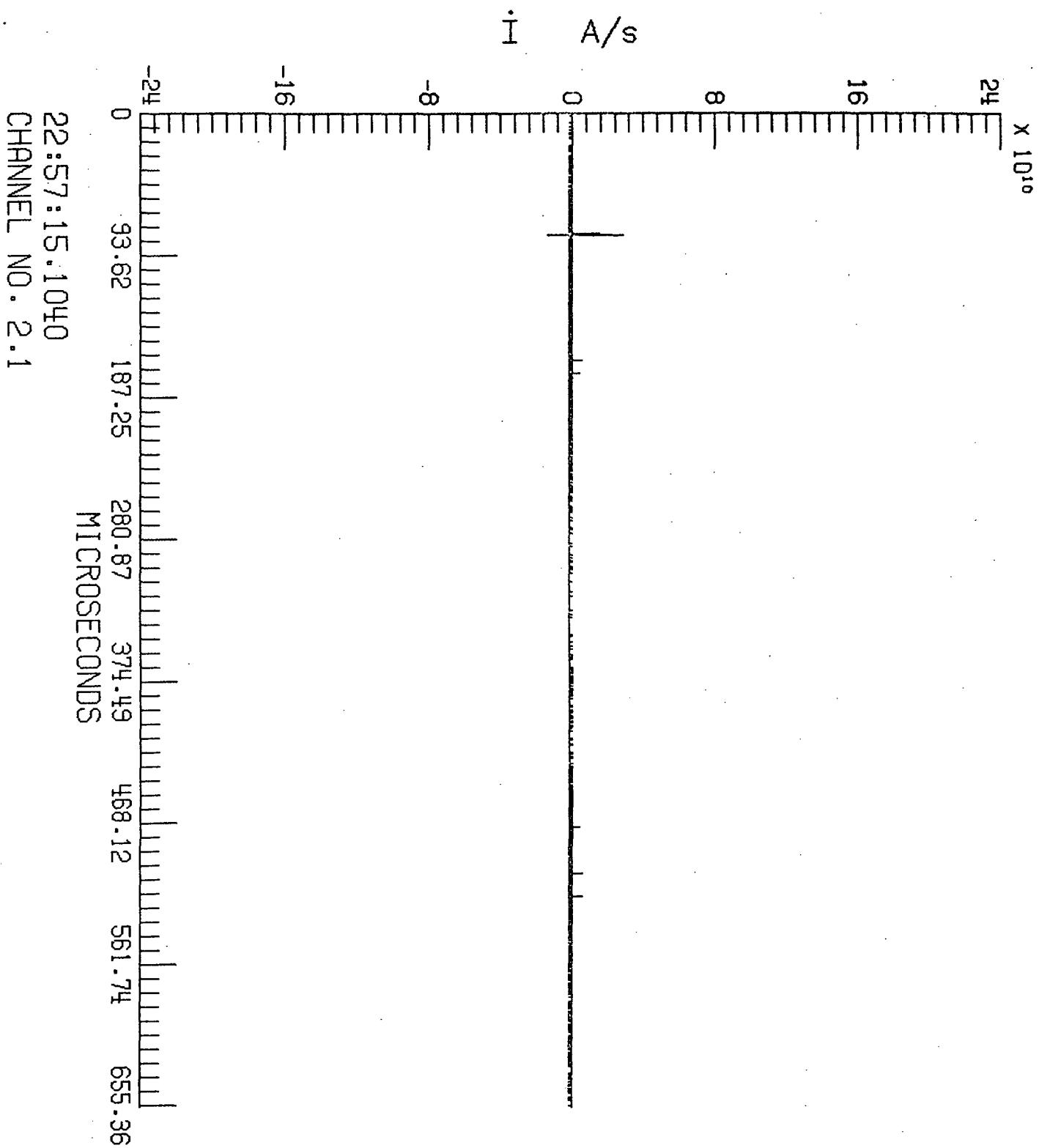


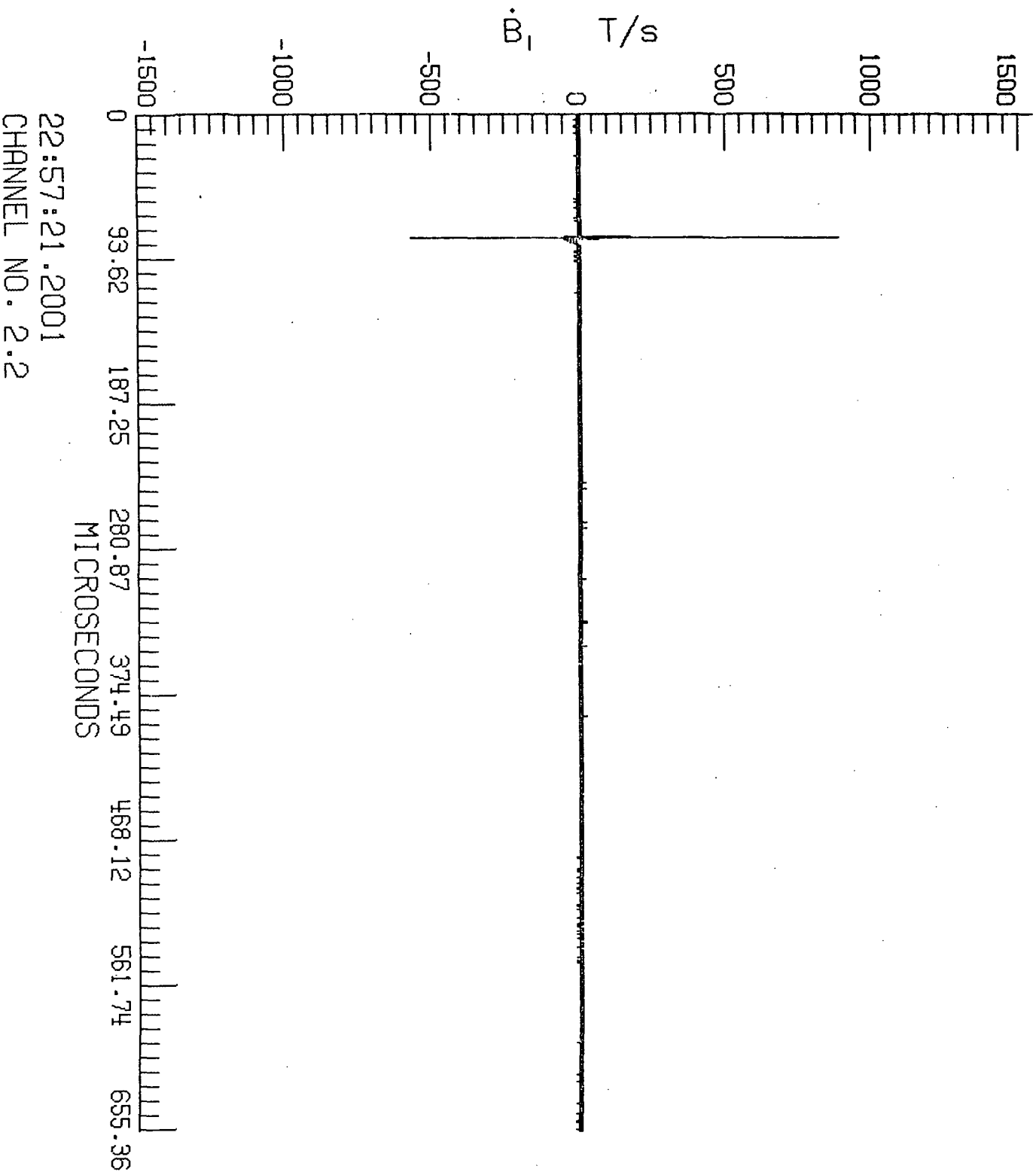
$\dot{D}_t \quad A/m^2$ 

22:57:09.0078

CHANNEL NO. 2.0

MICROSECONDS

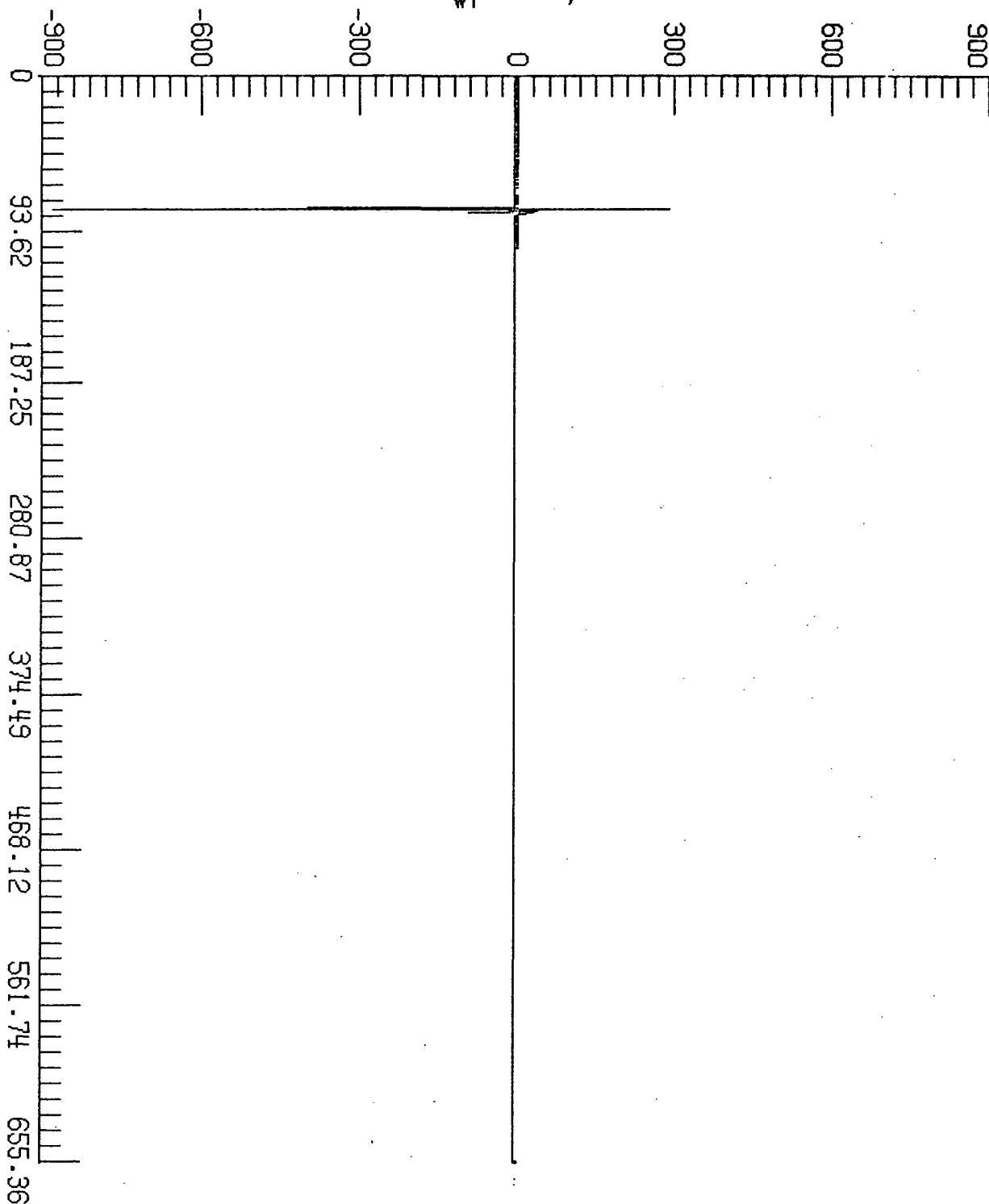




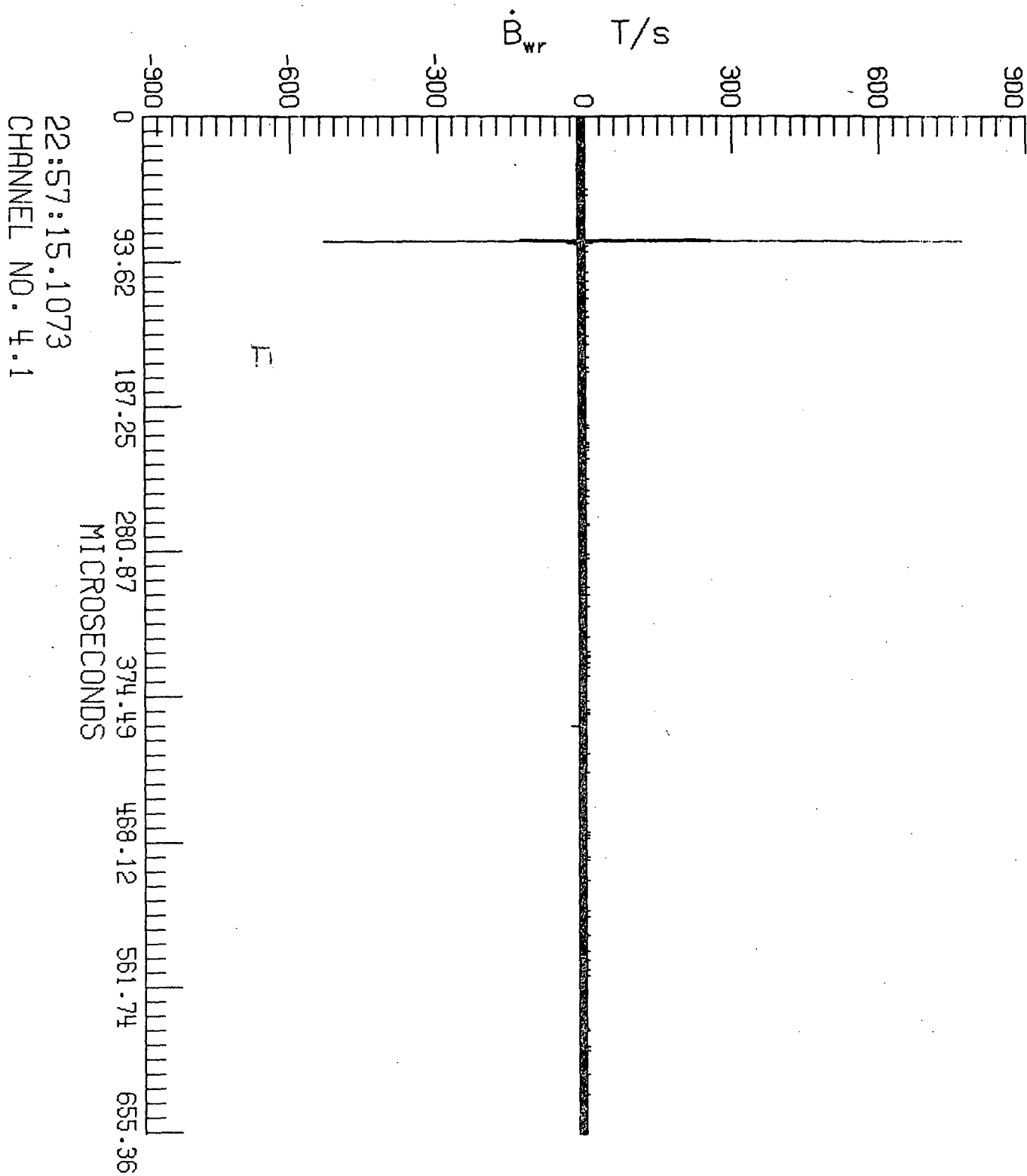
F106 LIGHTNING/TK.5/M.THOMAS

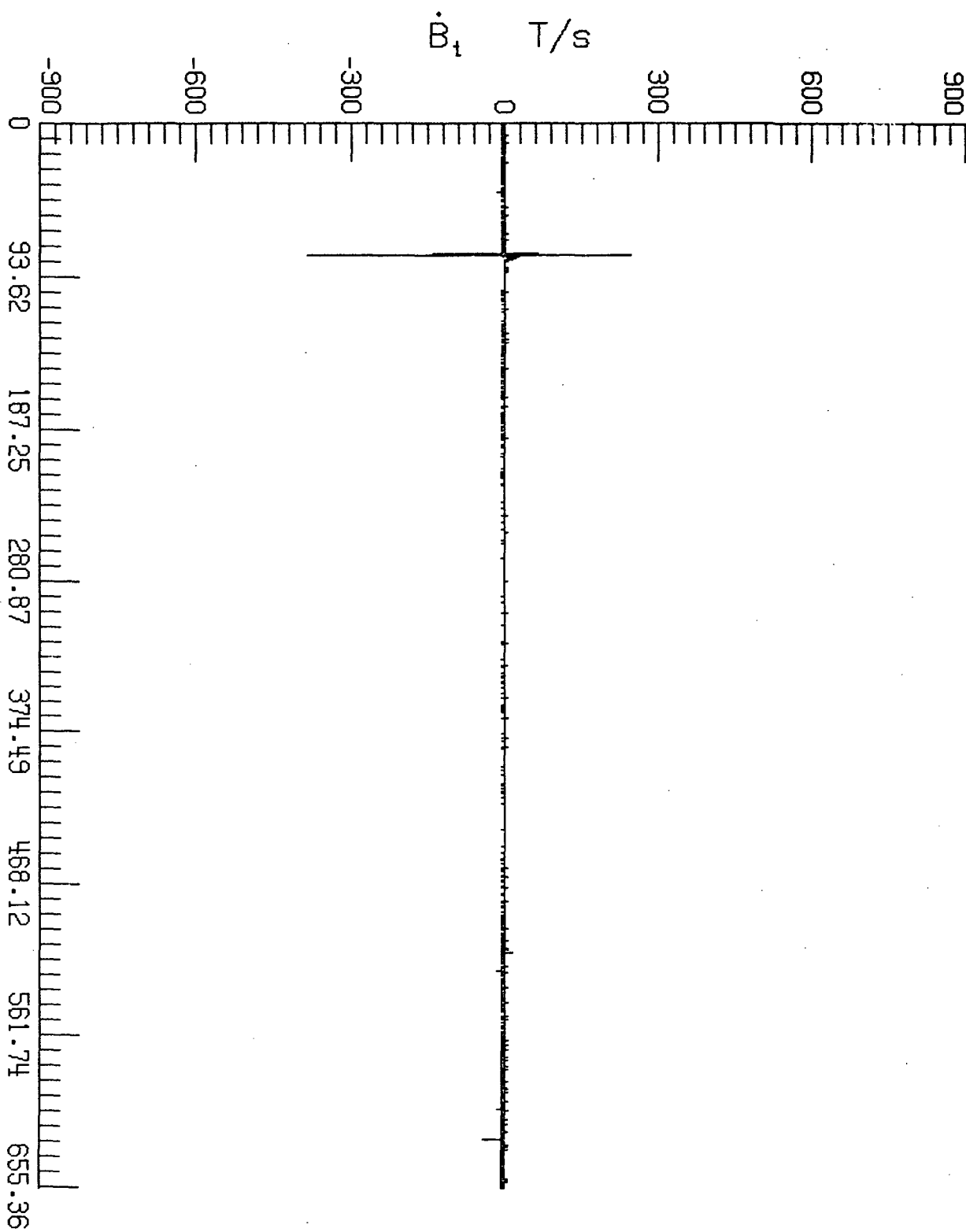
TEST NO. 83-C

$\dot{B}_w$  T/s

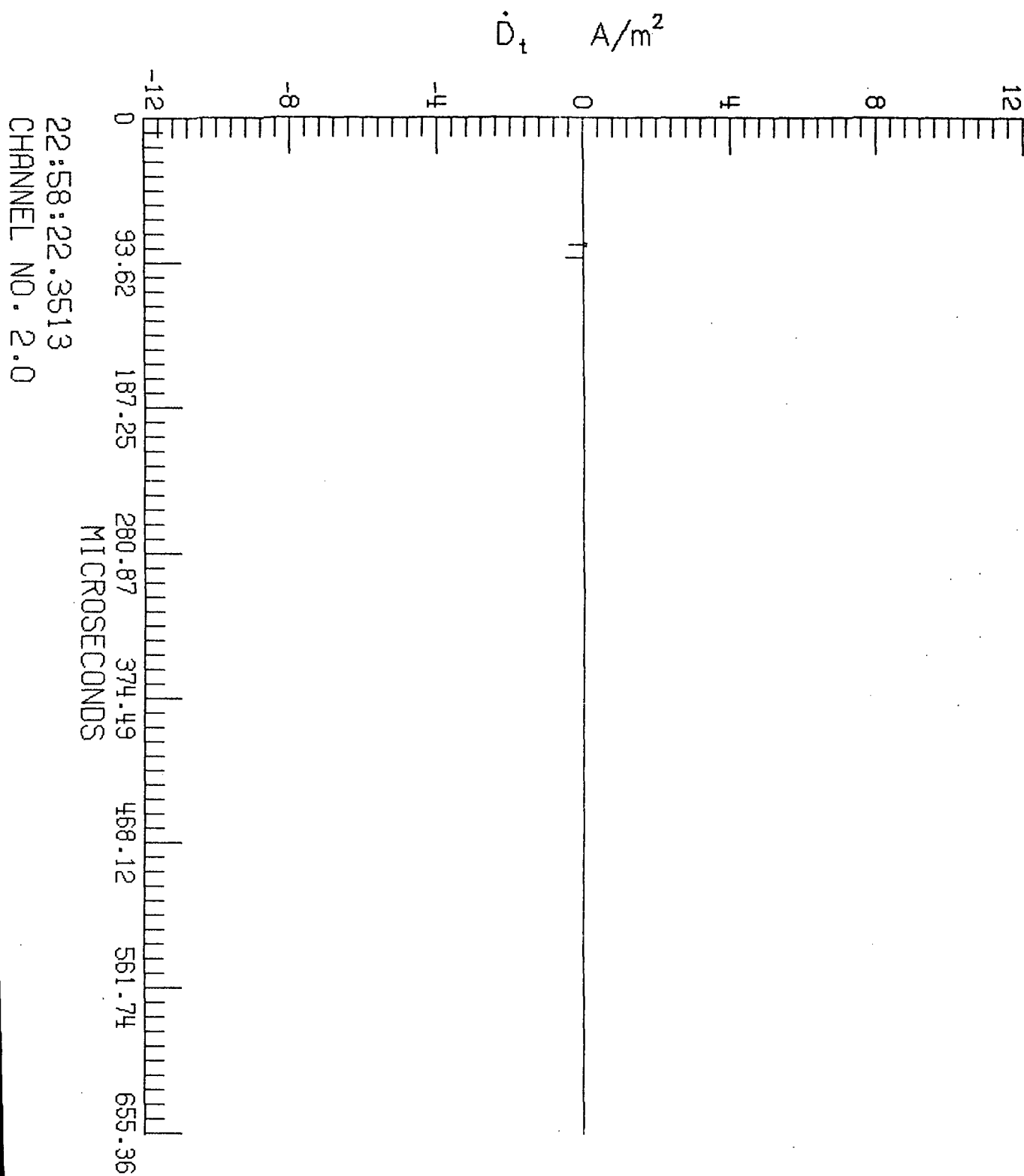


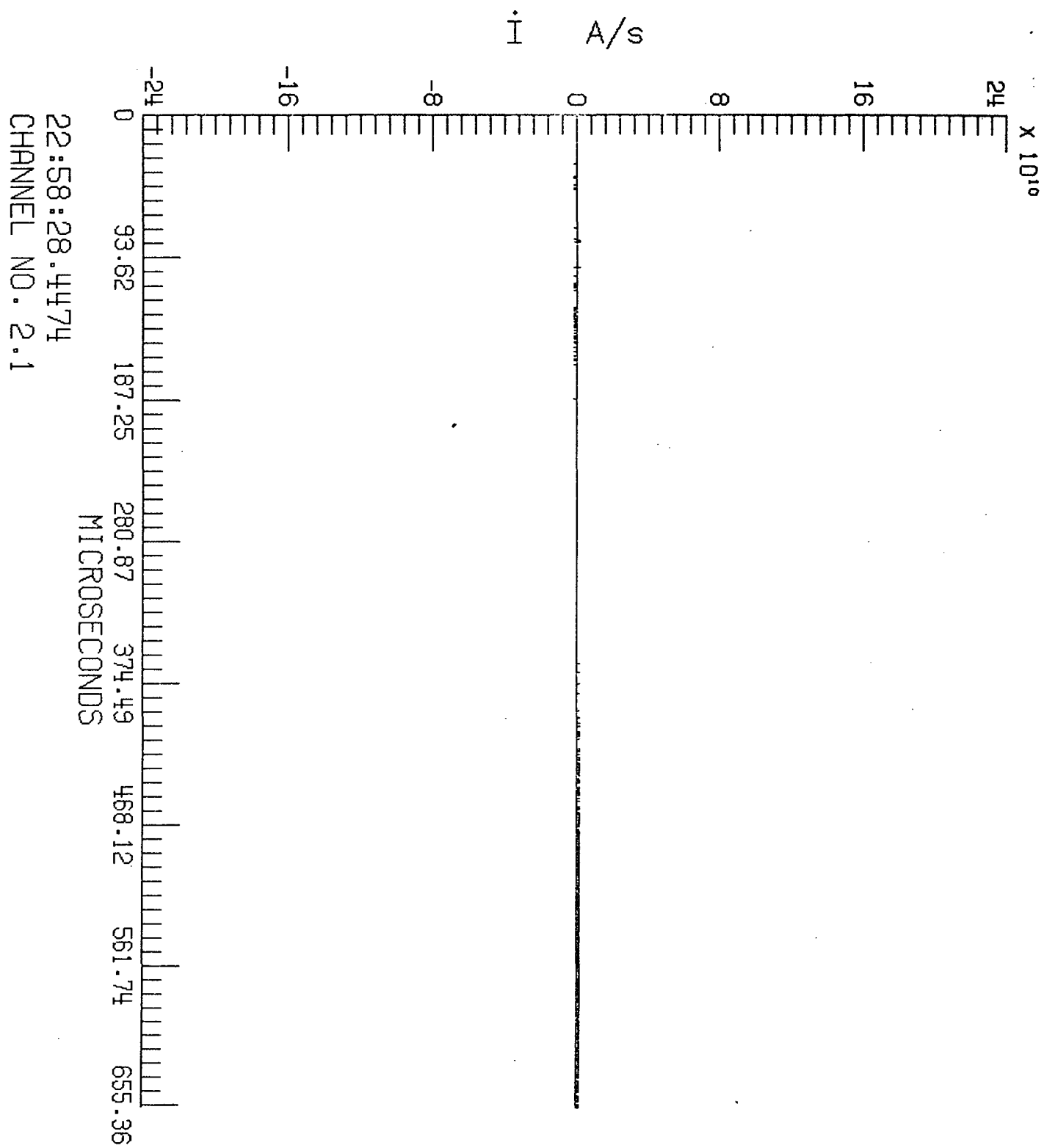
22:57:09.0113  
CHANNEL NO. 4.0



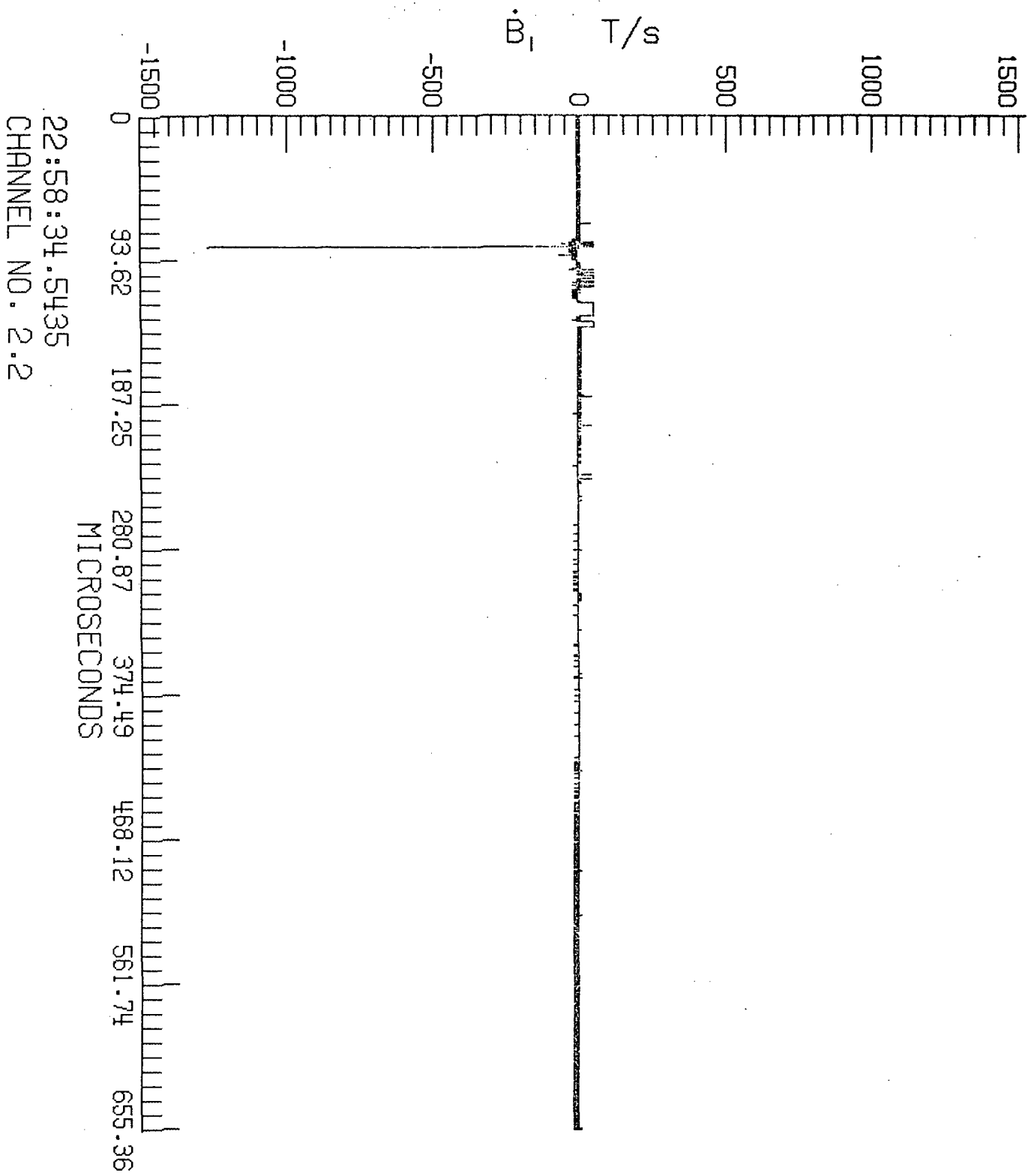


22:57:21.2033  
CHANNEL NO. 4.2



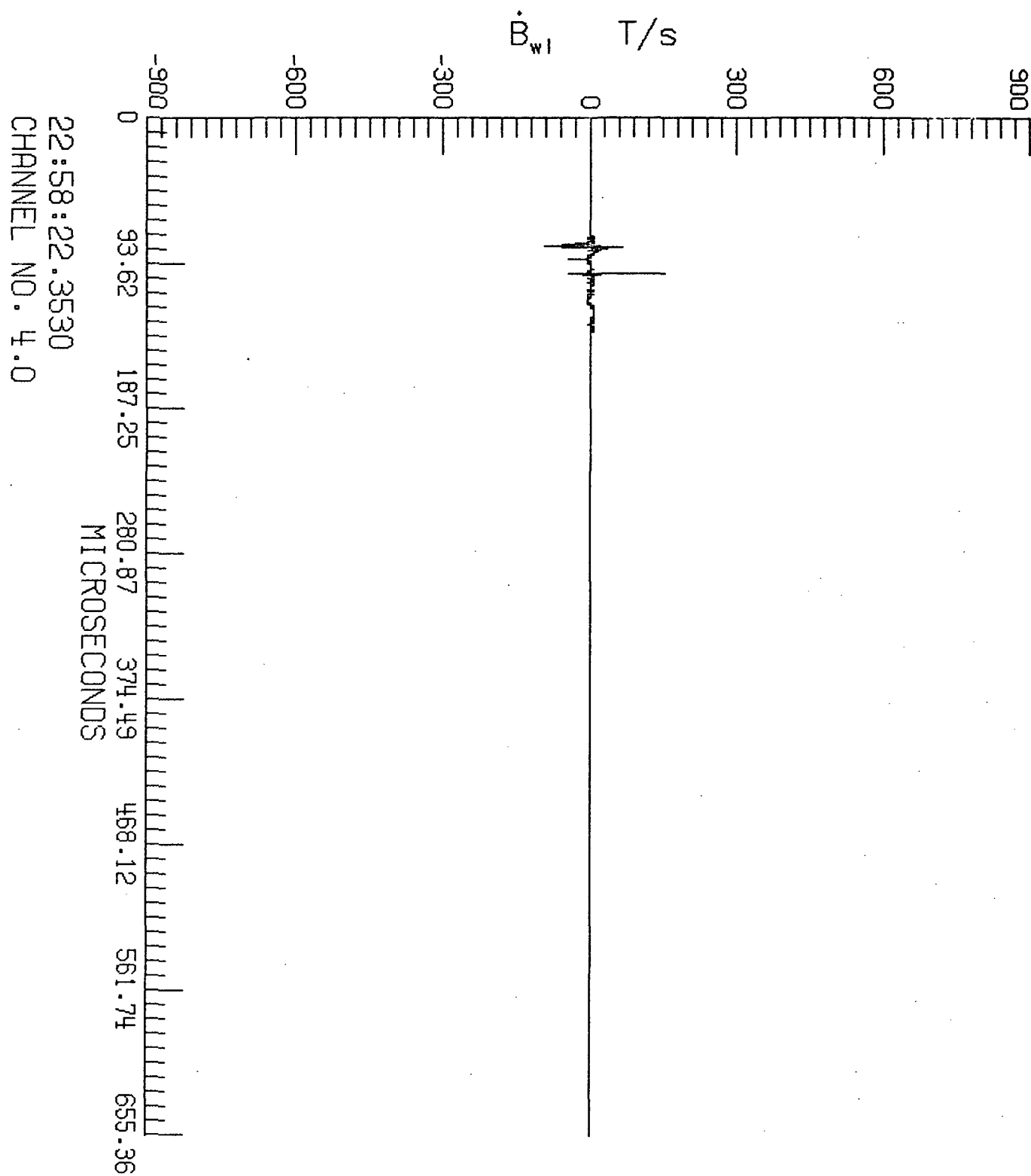


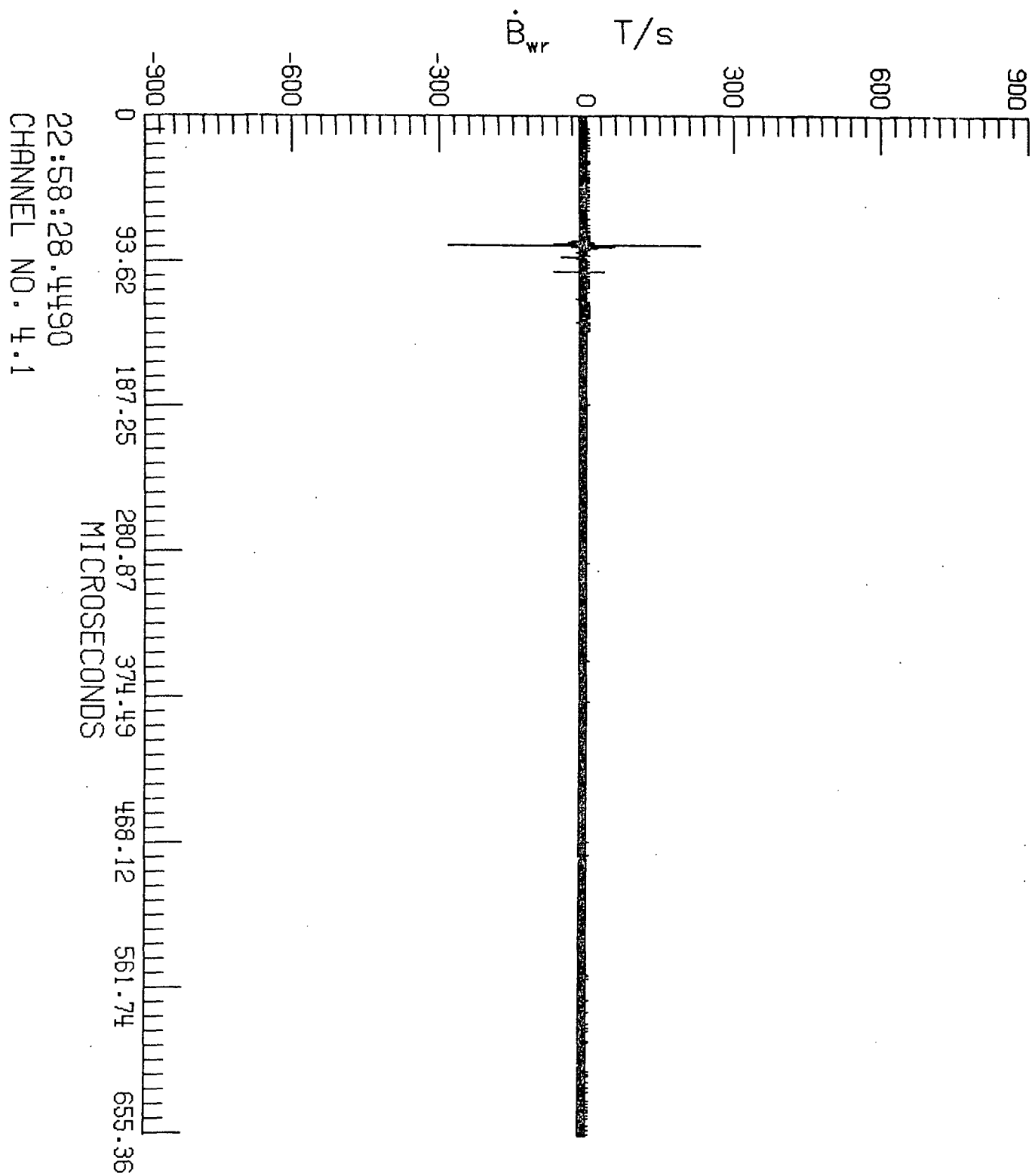


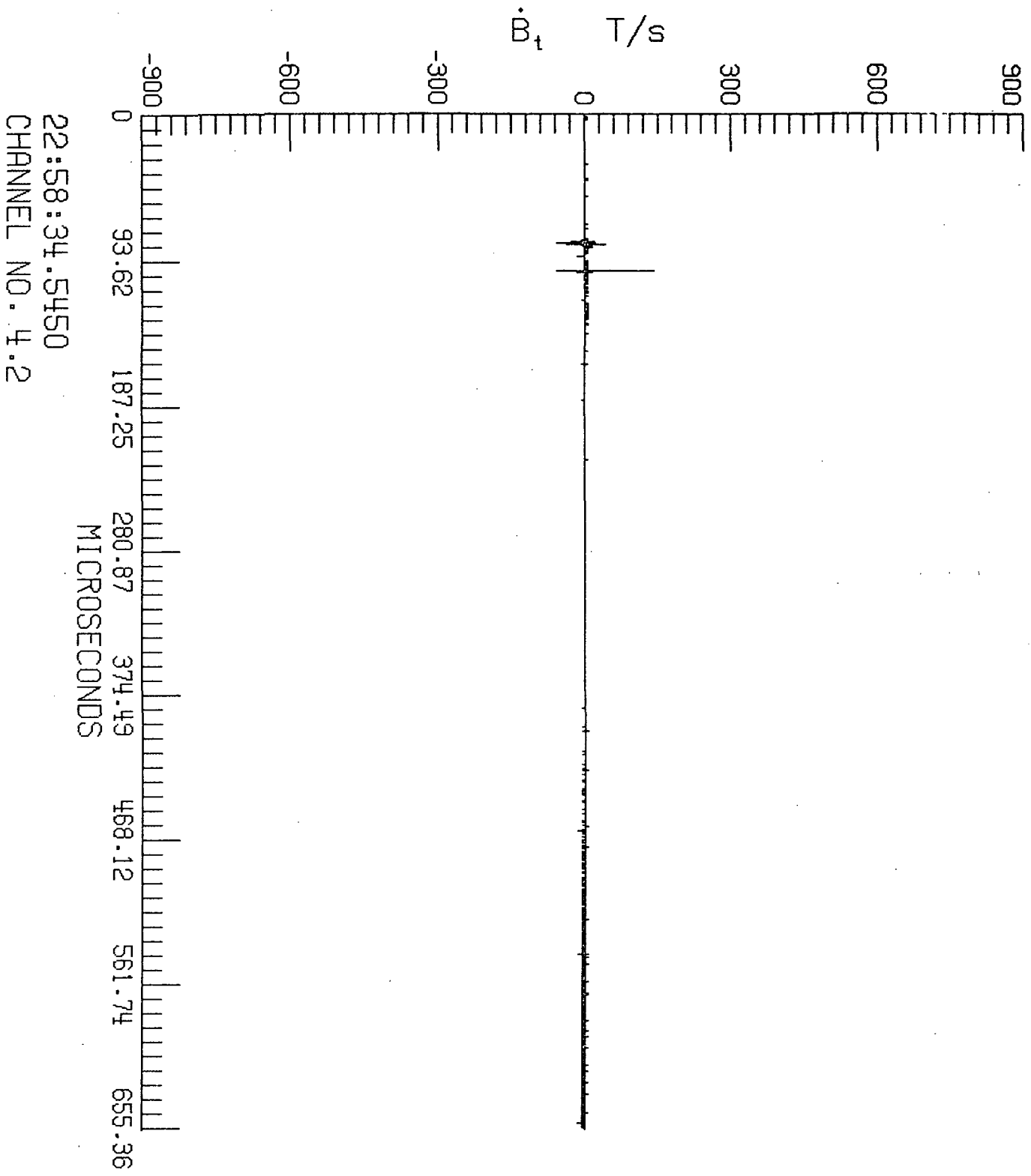


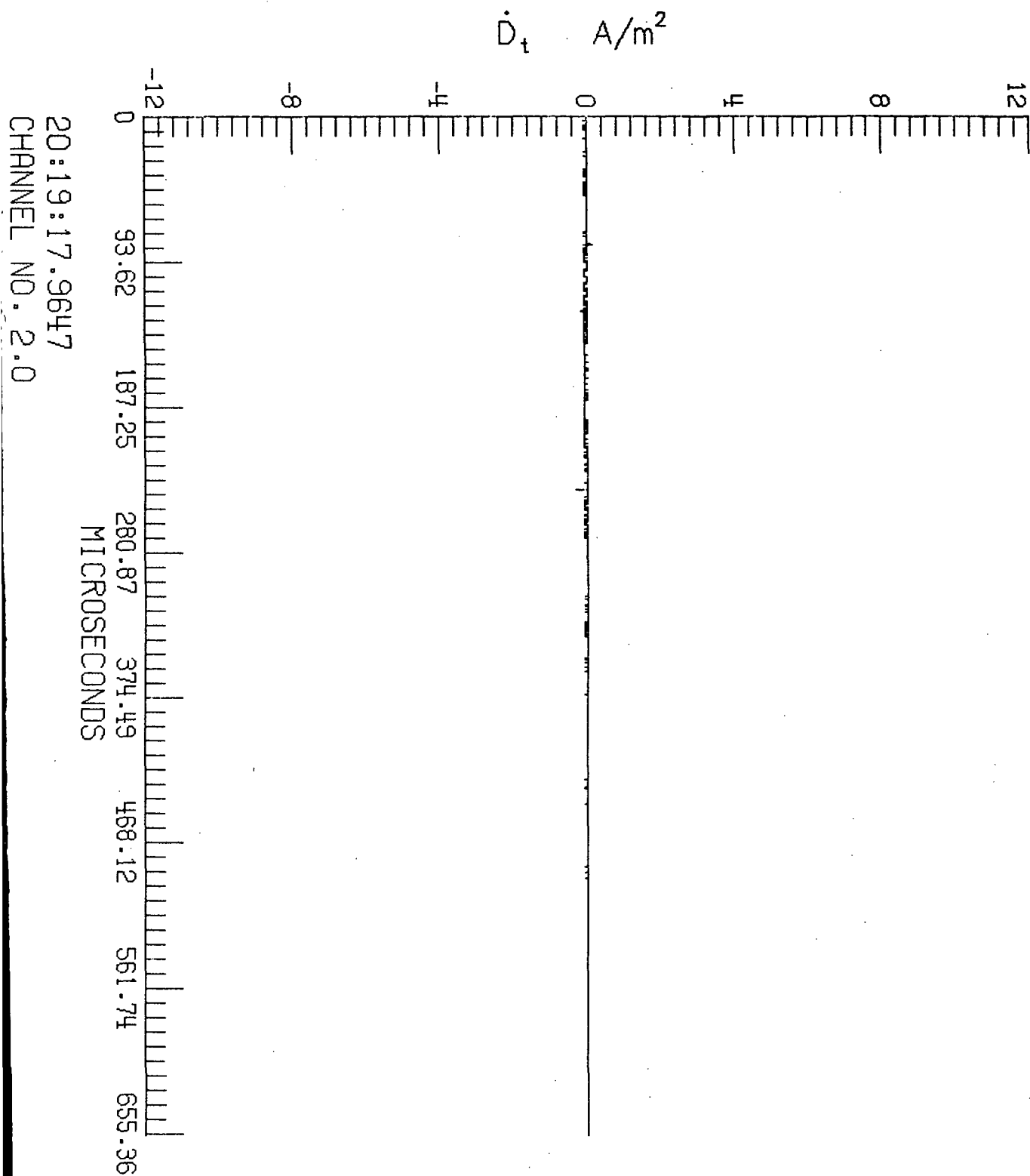
F106 LIGHTNING/TK.5/M.THOMAS

TEST NO.



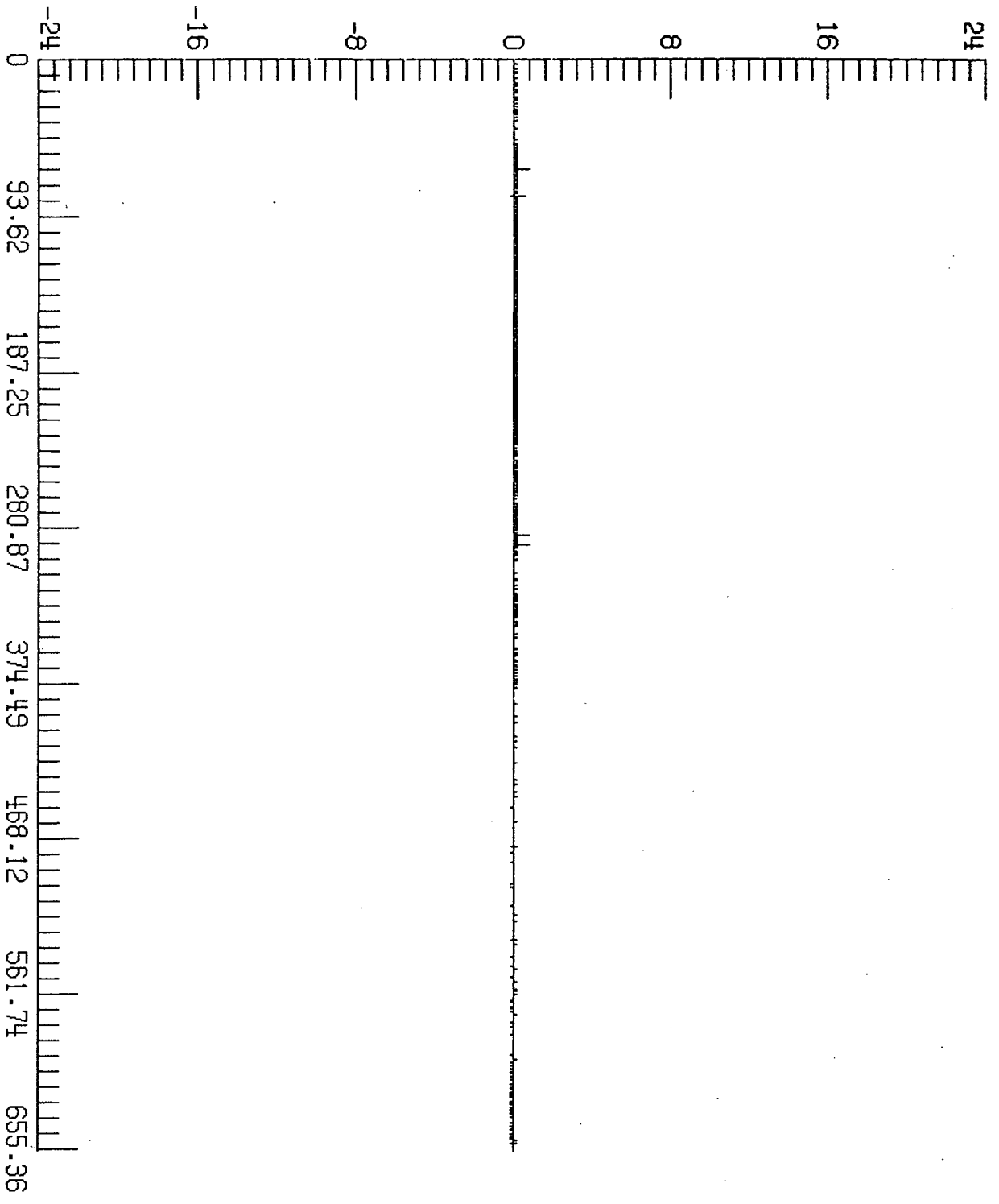






I A/s

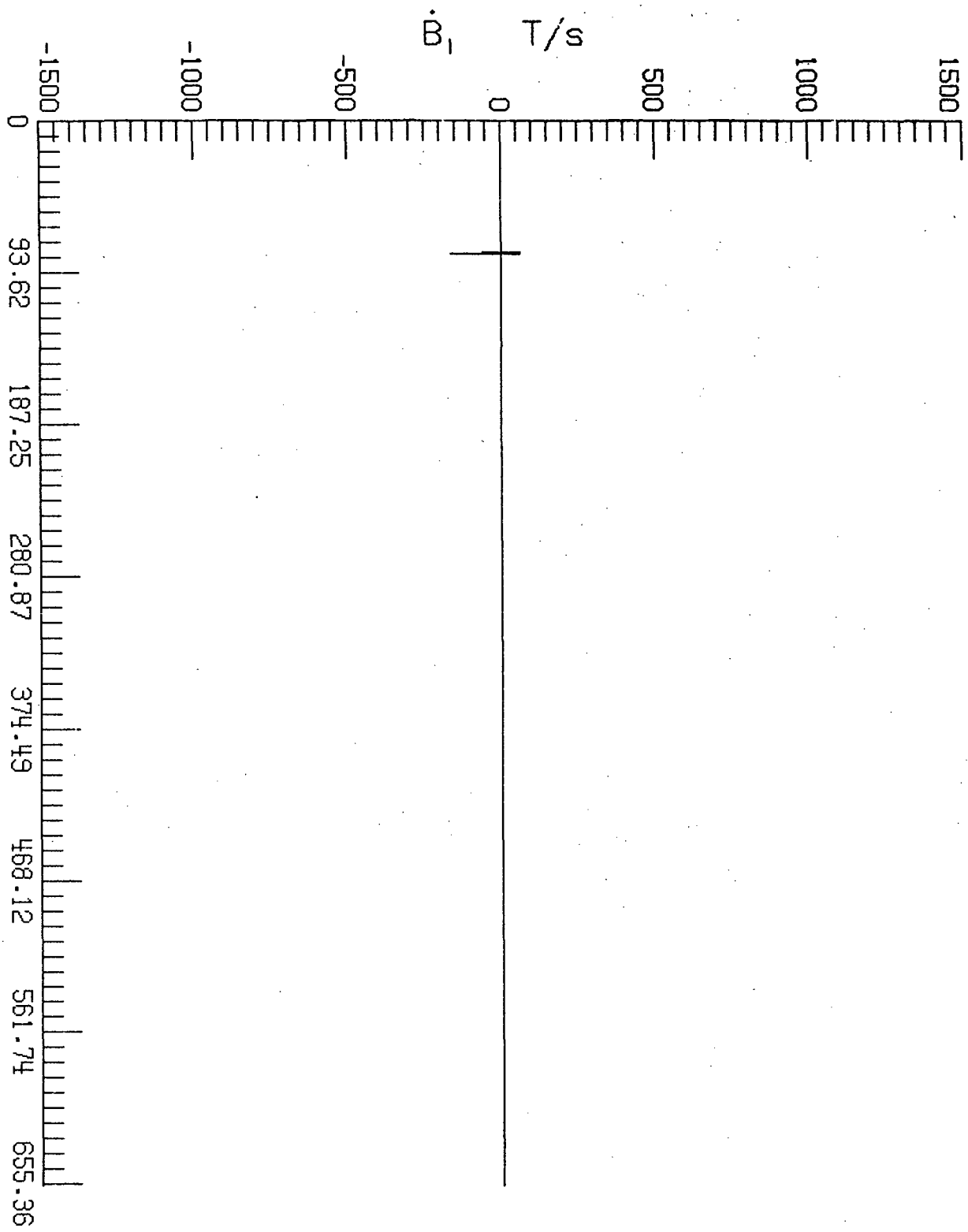
$\times 10^{10}$

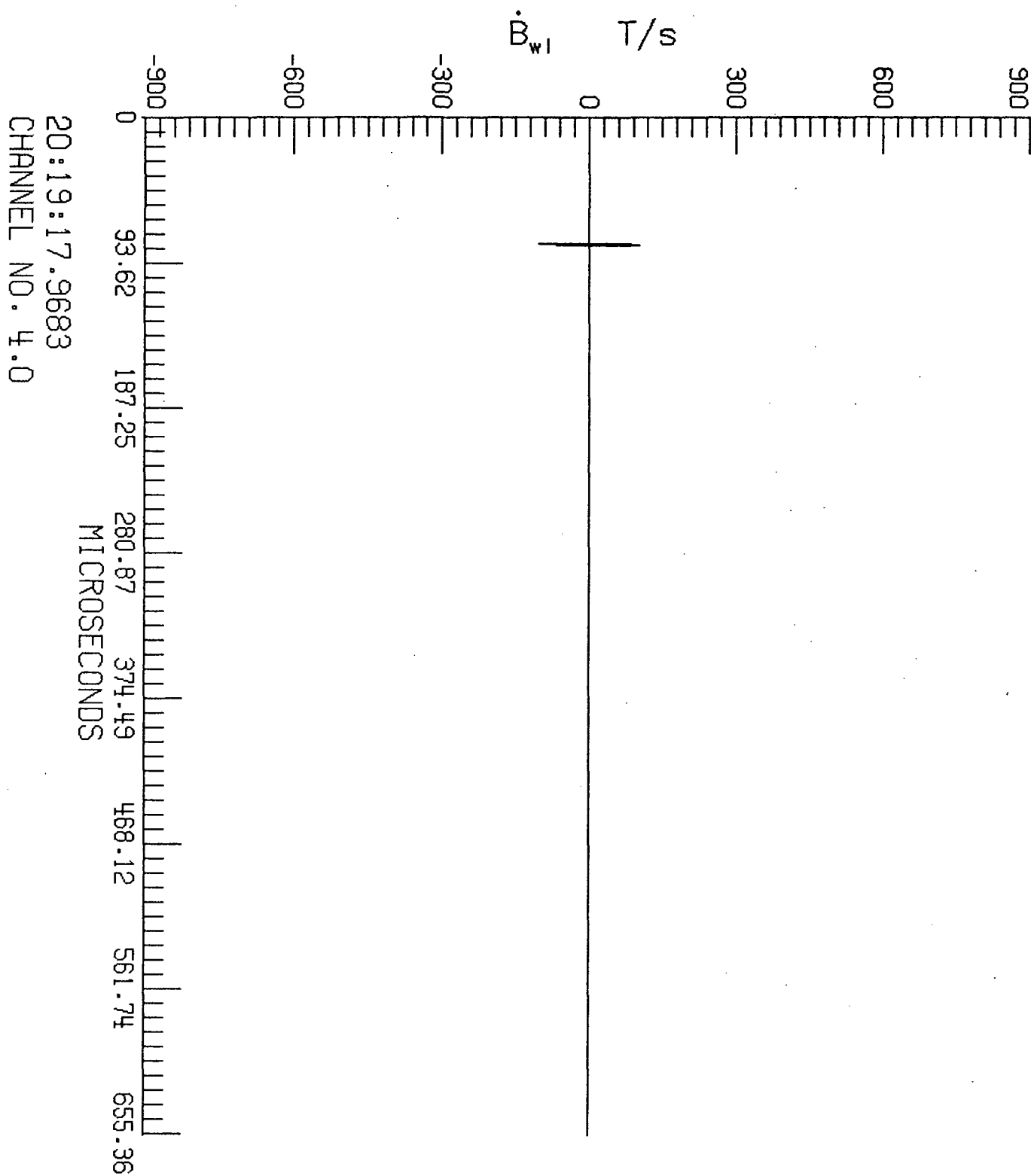


20:19:24.0608  
CHANNEL NO. 2.1

20:19:30.1569  
CHANNEL NO 2 2

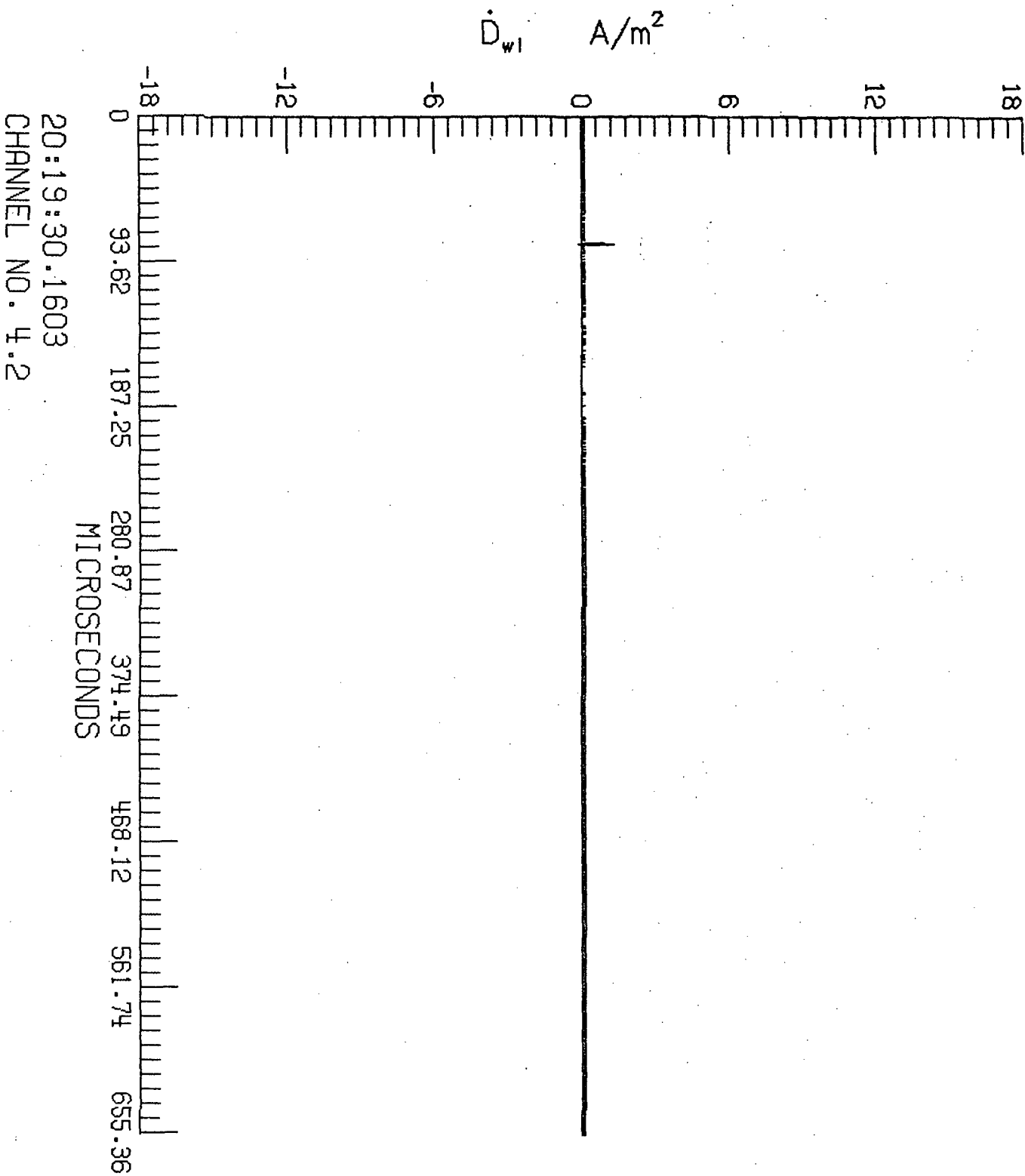
MICROSECONDS



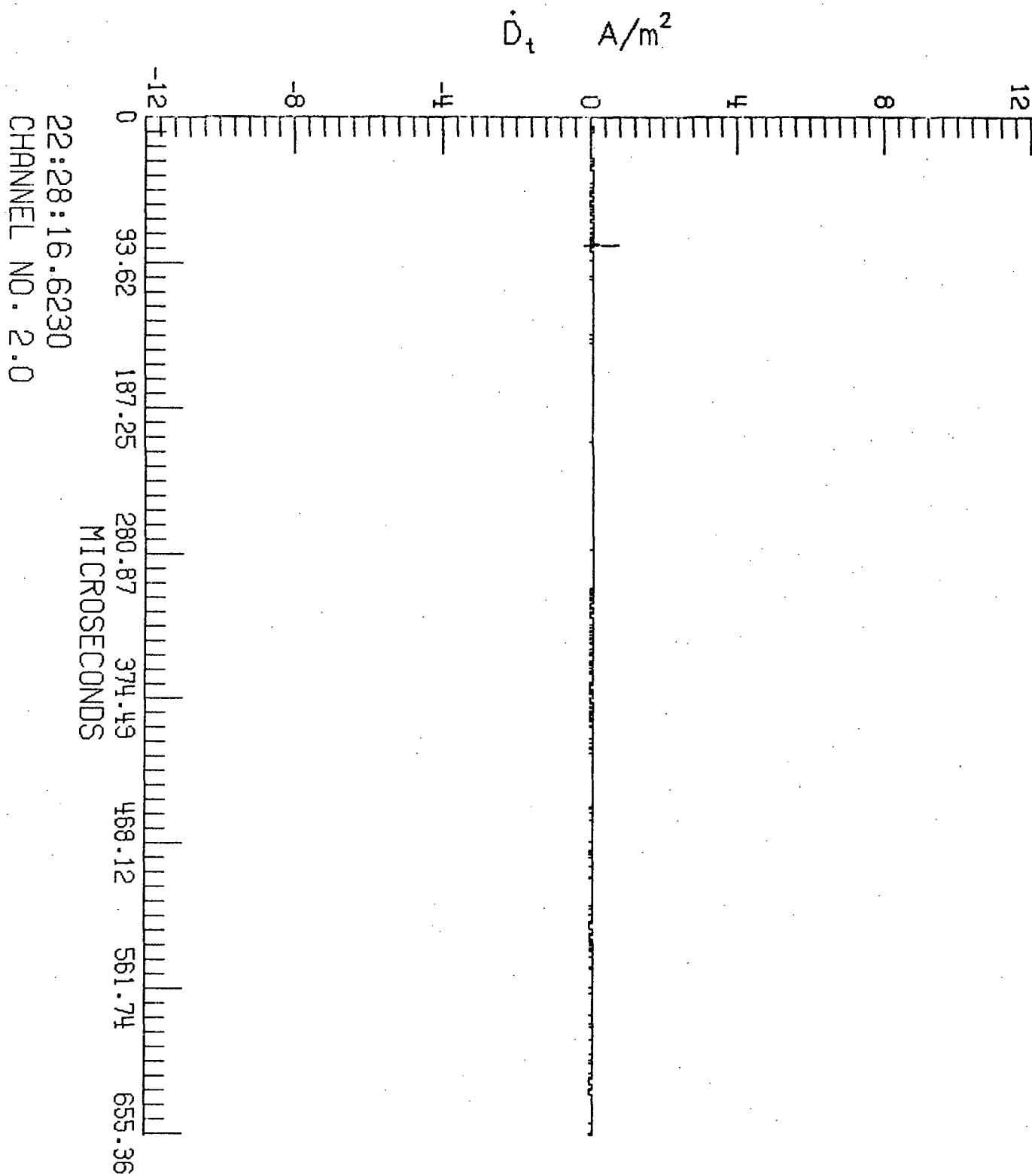


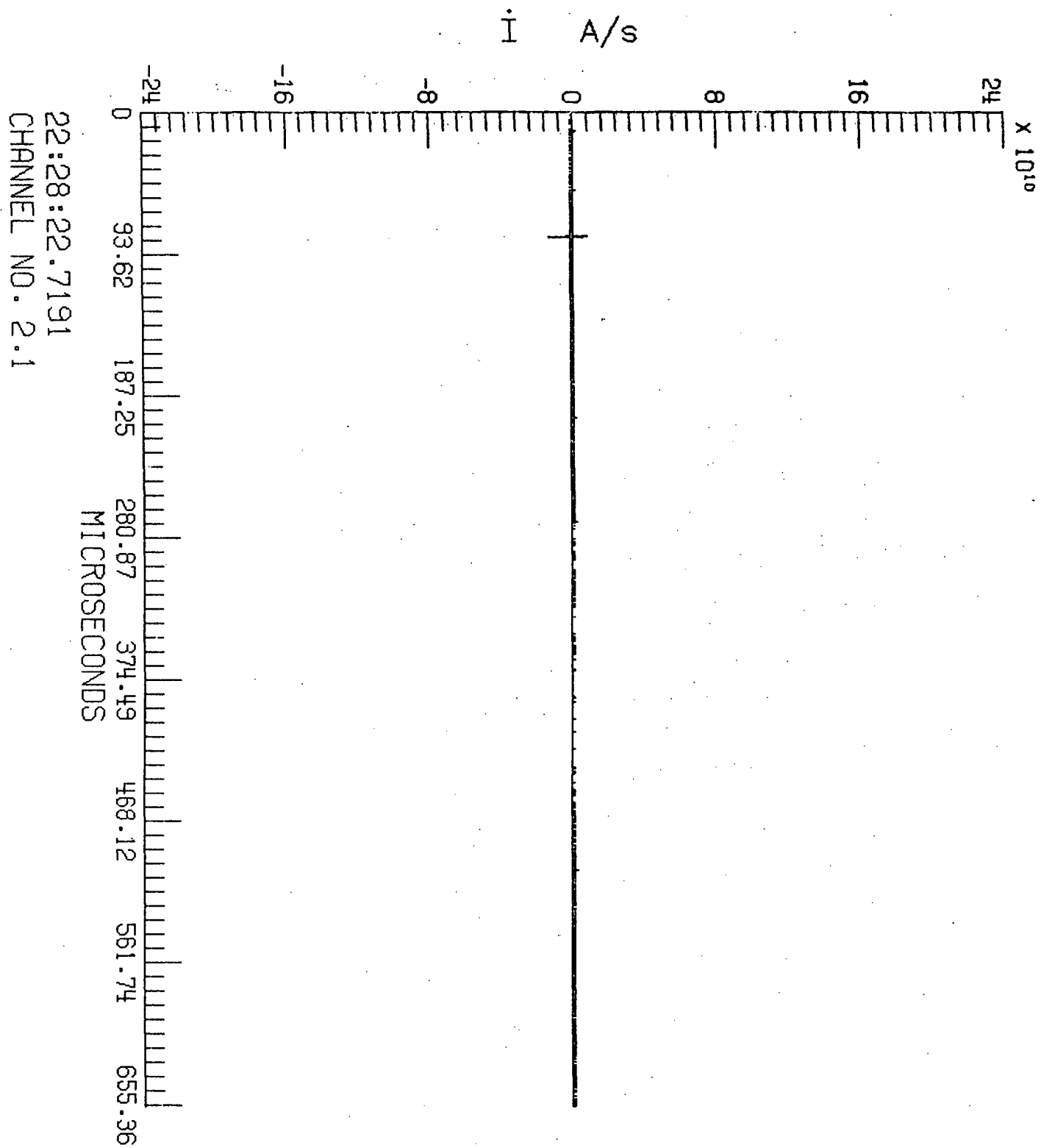
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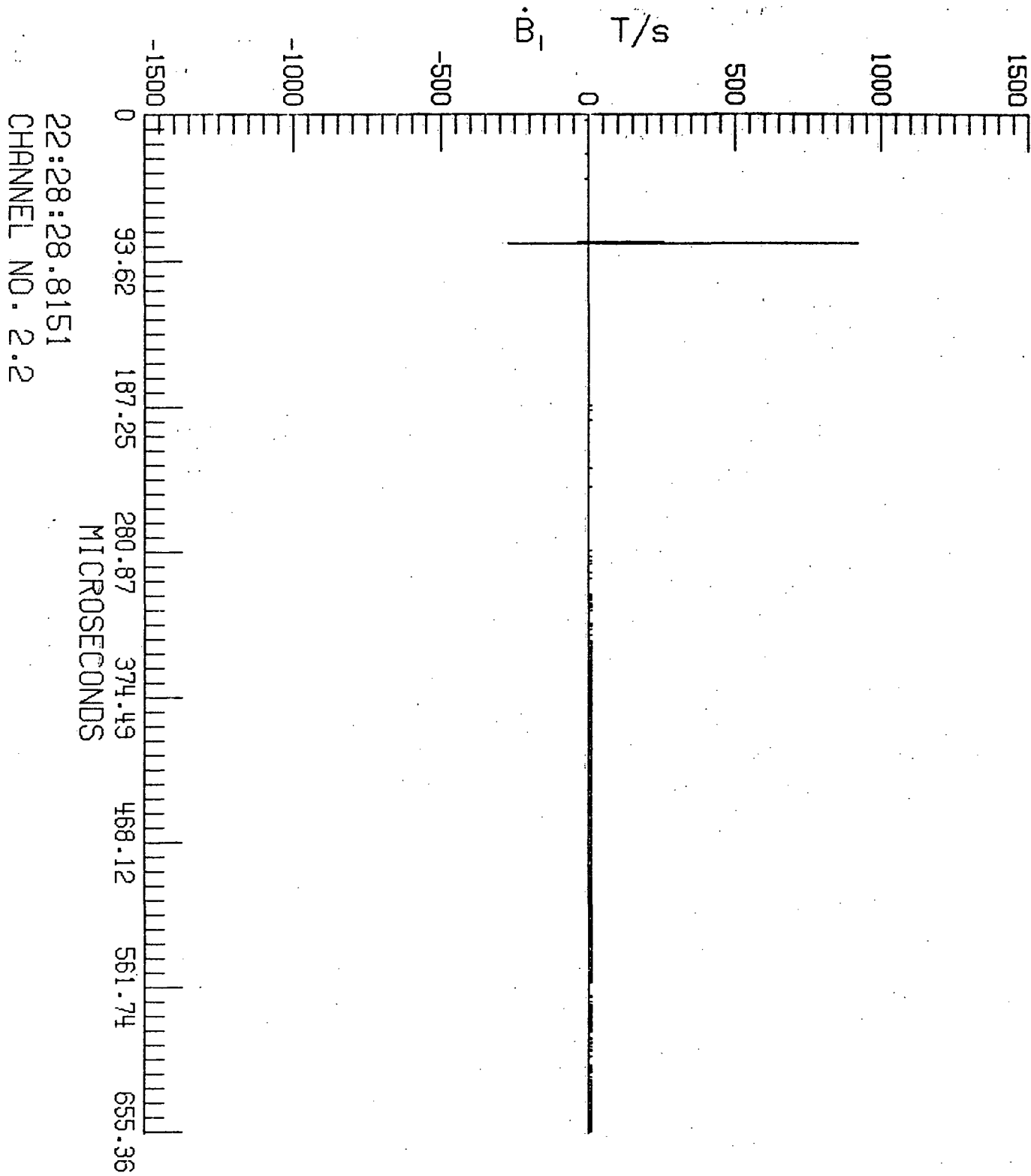


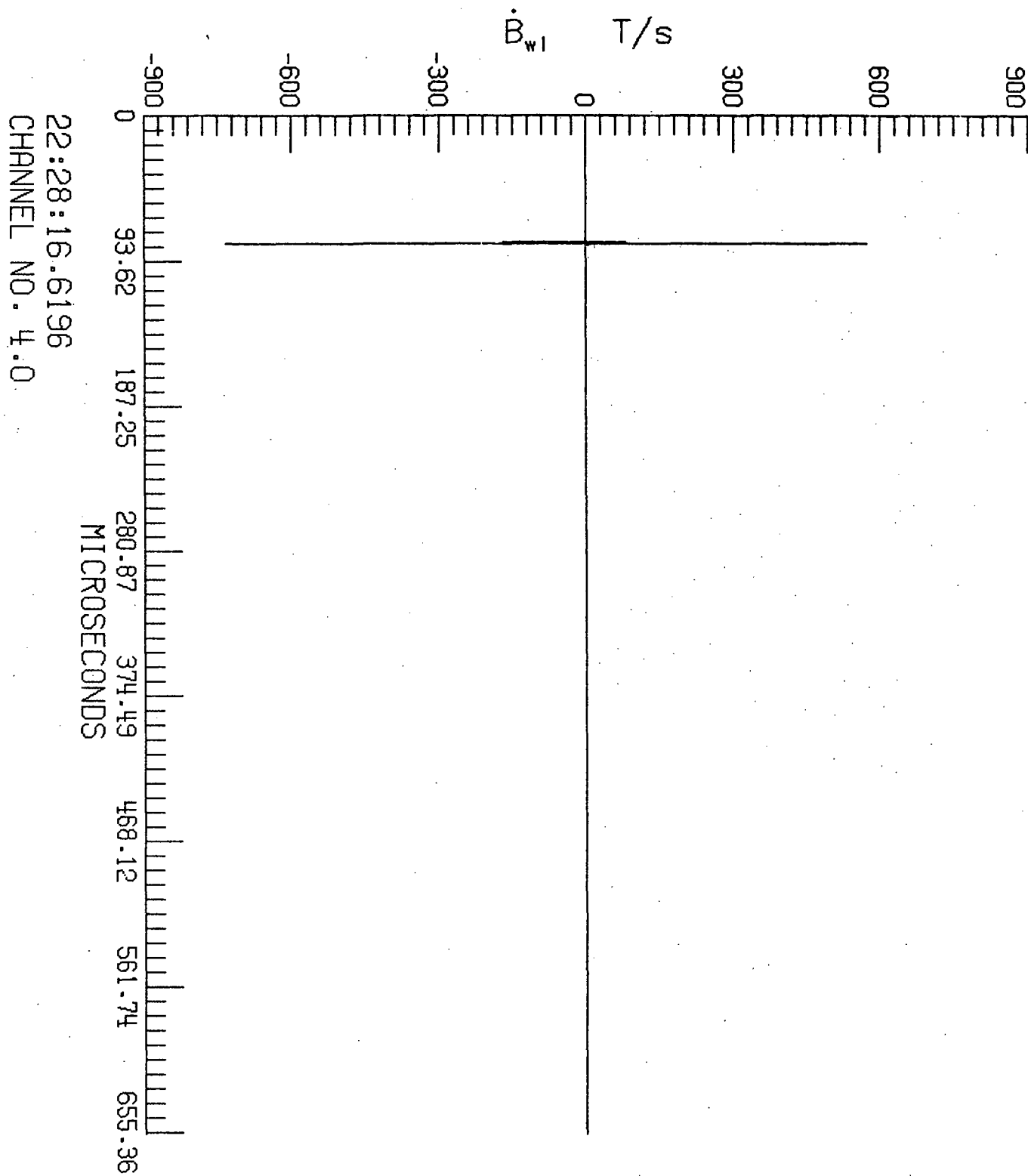


c-2

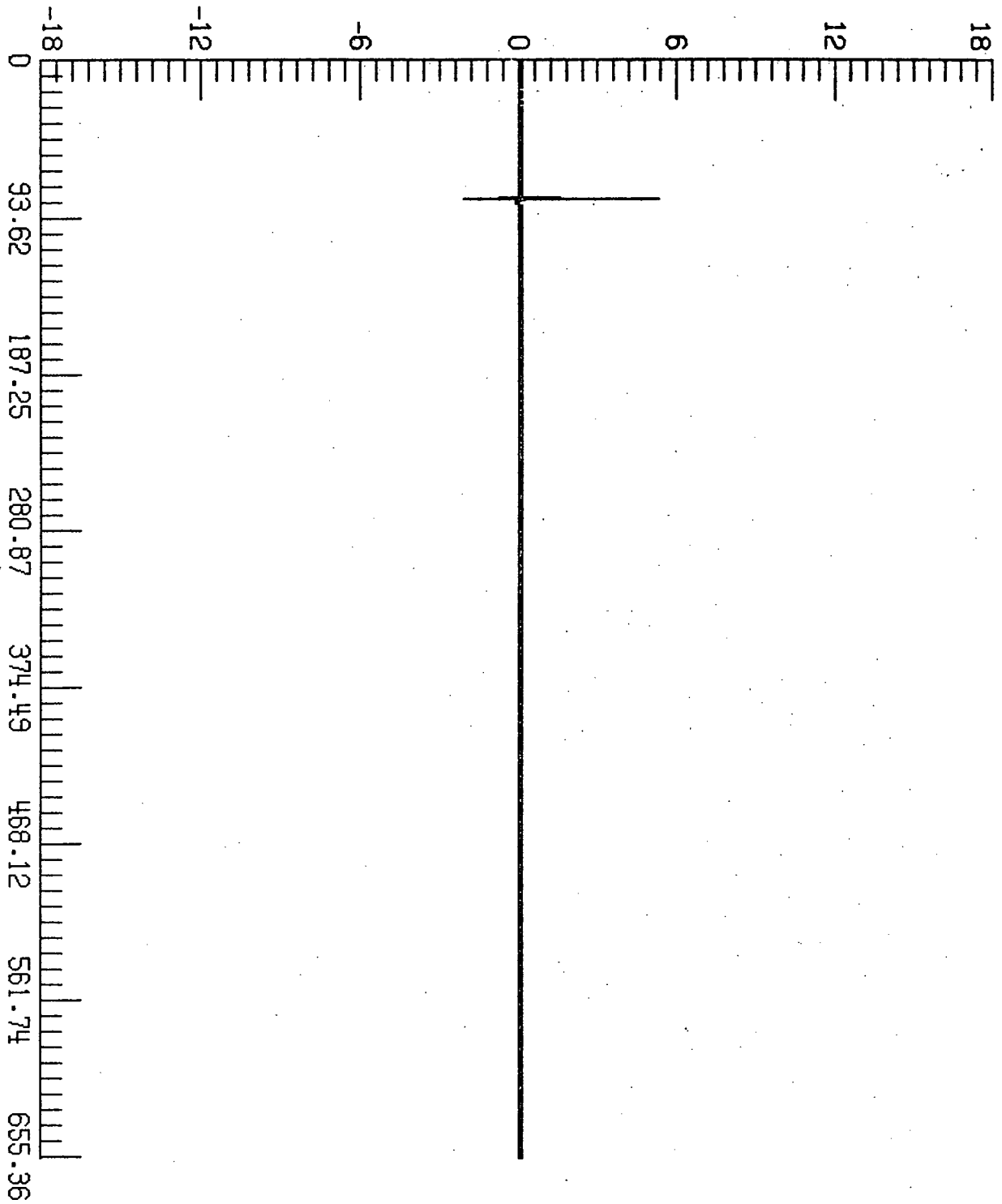








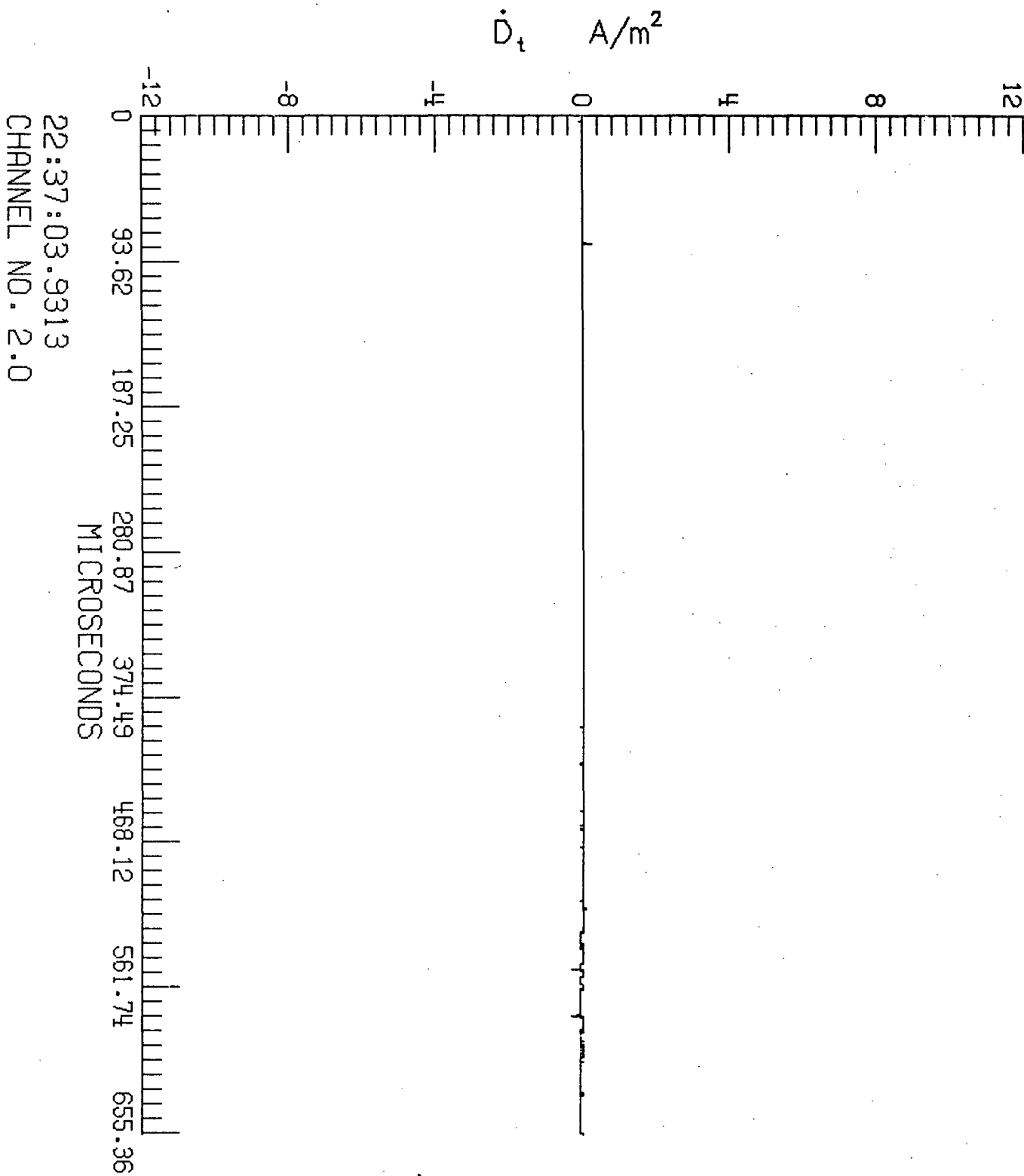
$\dot{D}_{wl}$   $A/m^2$



22:28:28.8116

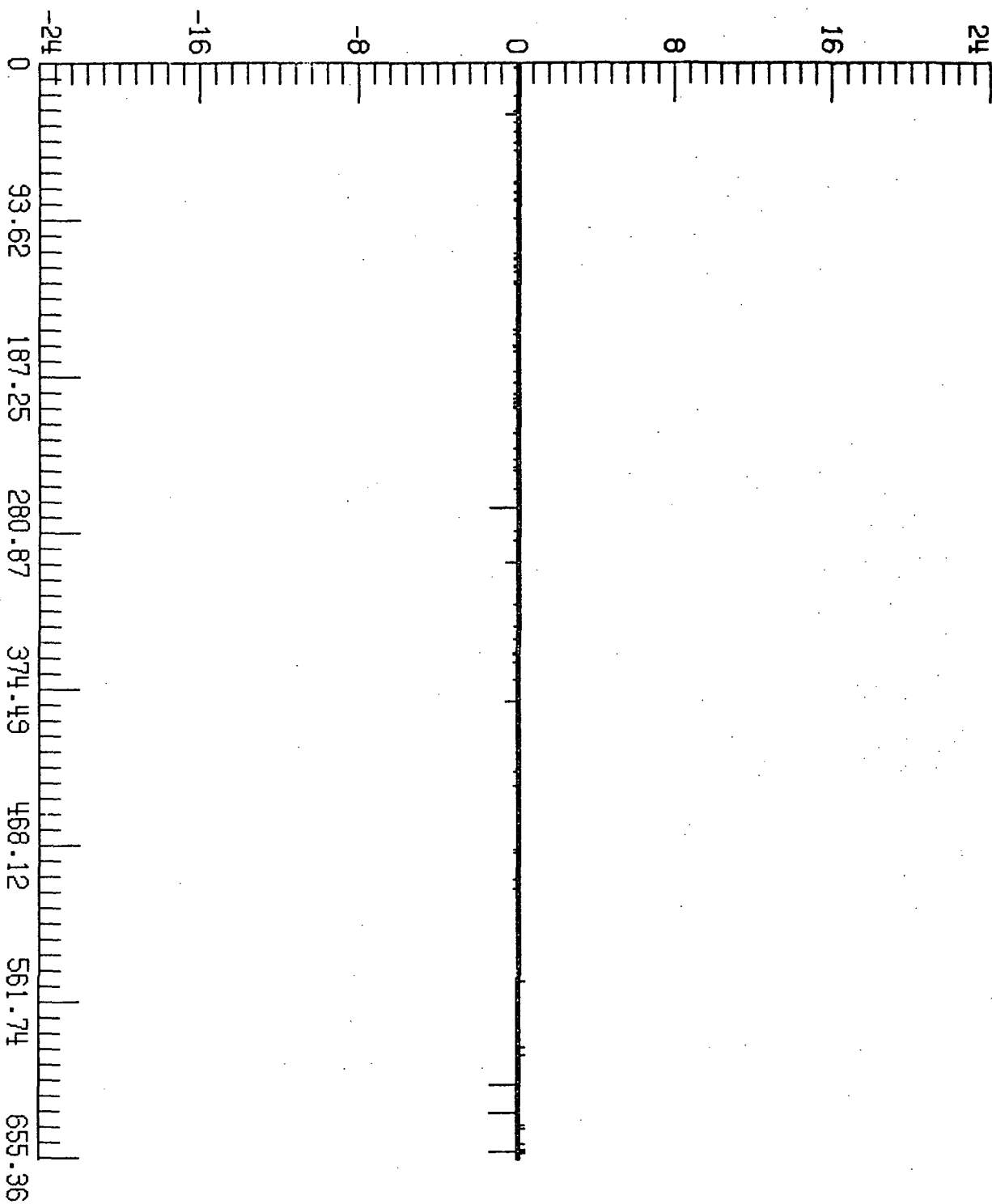
CHANNEL NO. 4.2

MICROSECONDS



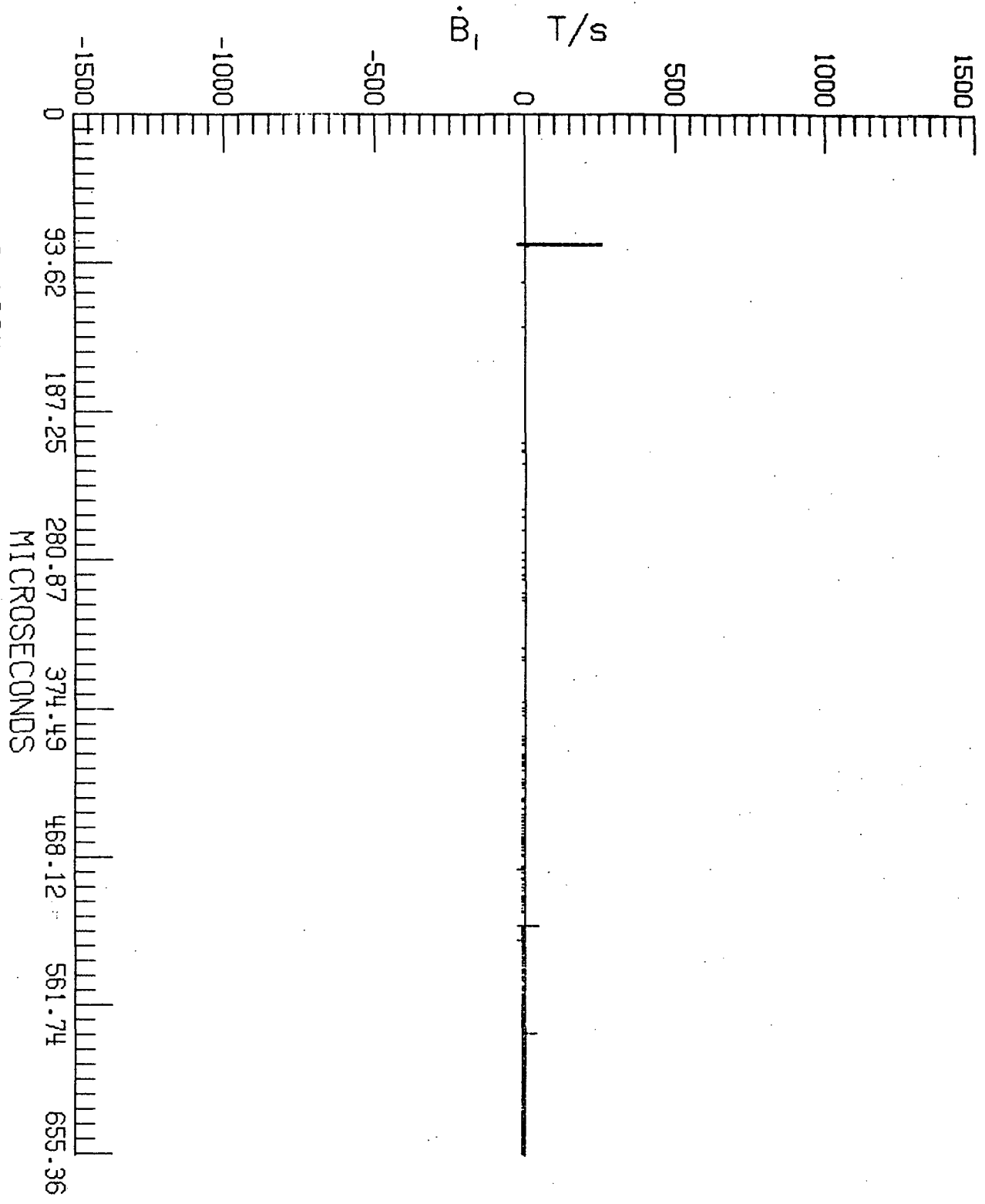
i A/s

x 10<sup>10</sup>

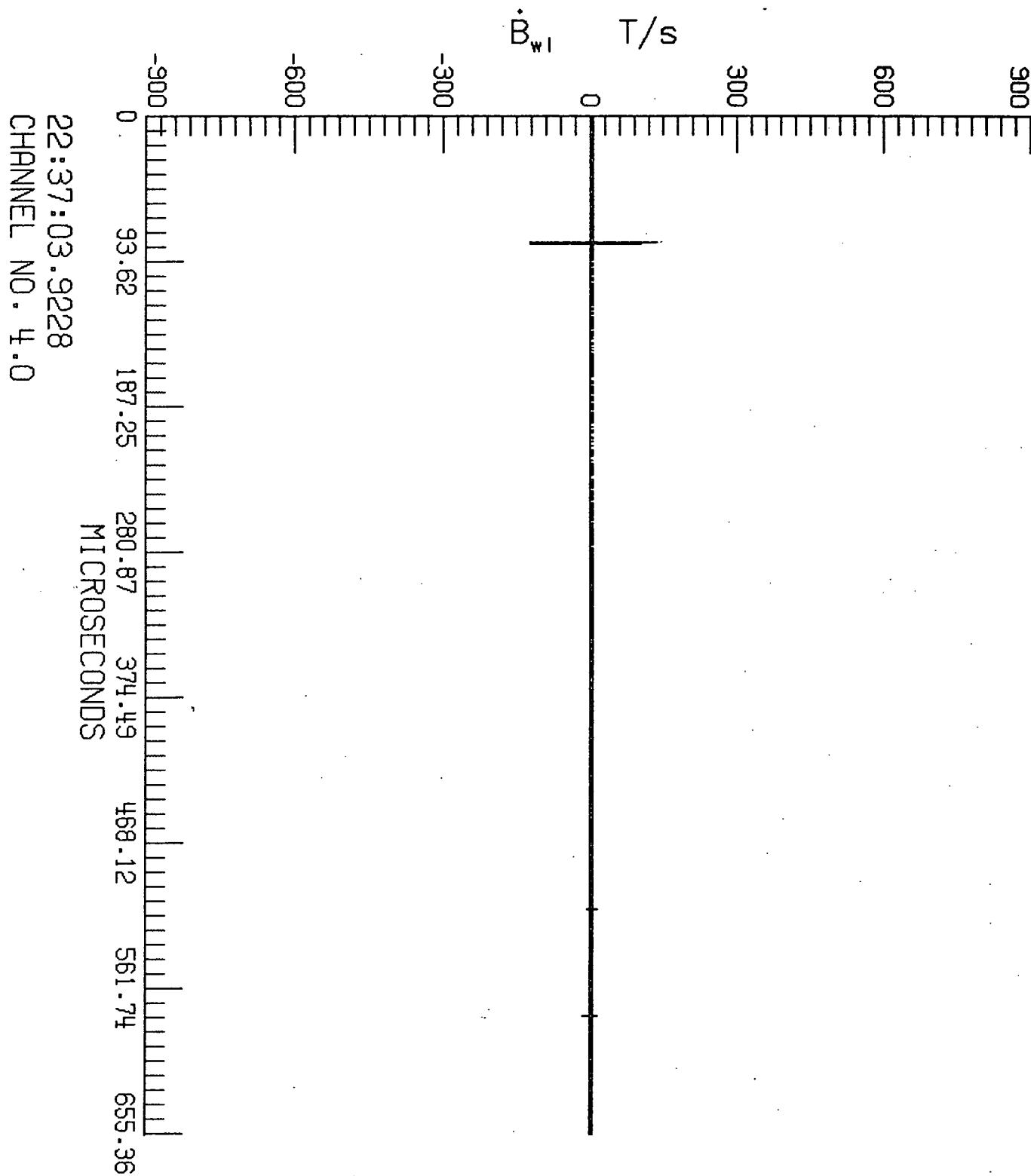


22:37:10.0273  
CHANNEL NO. 2.1

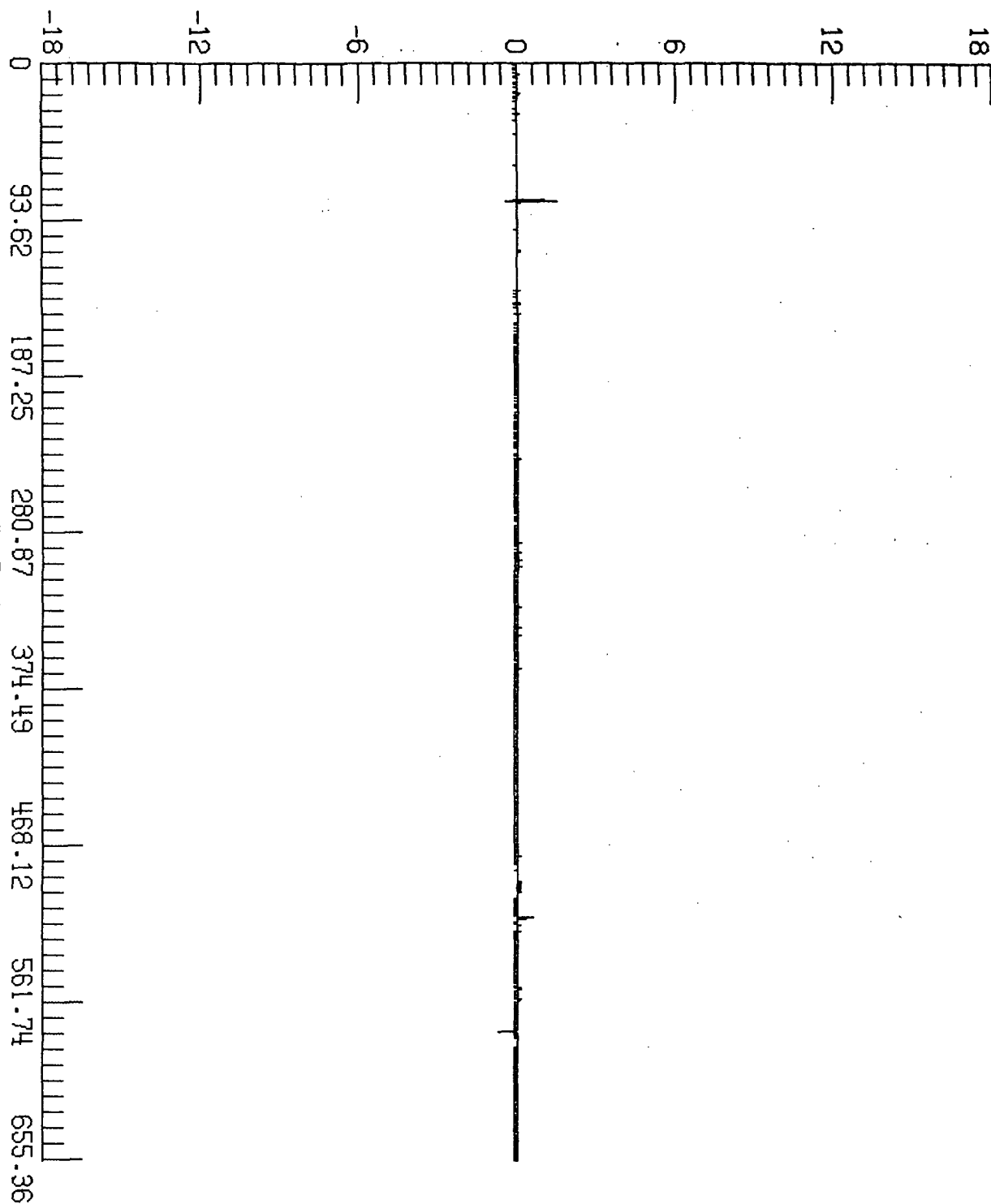




22:37:16.1234  
CHANNEL NO. 2.2



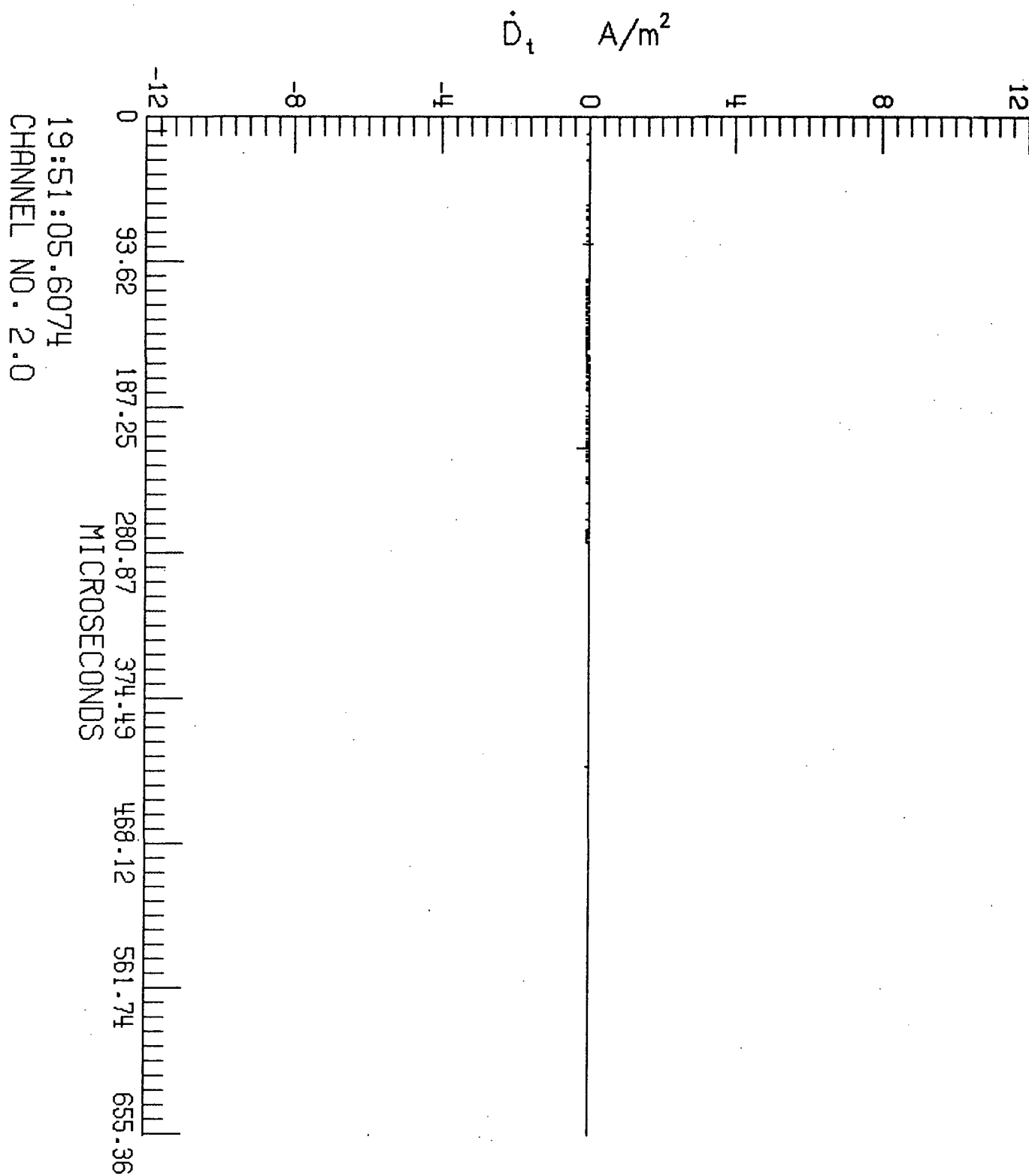
$\dot{D}_{w1}$   $A/m^2$

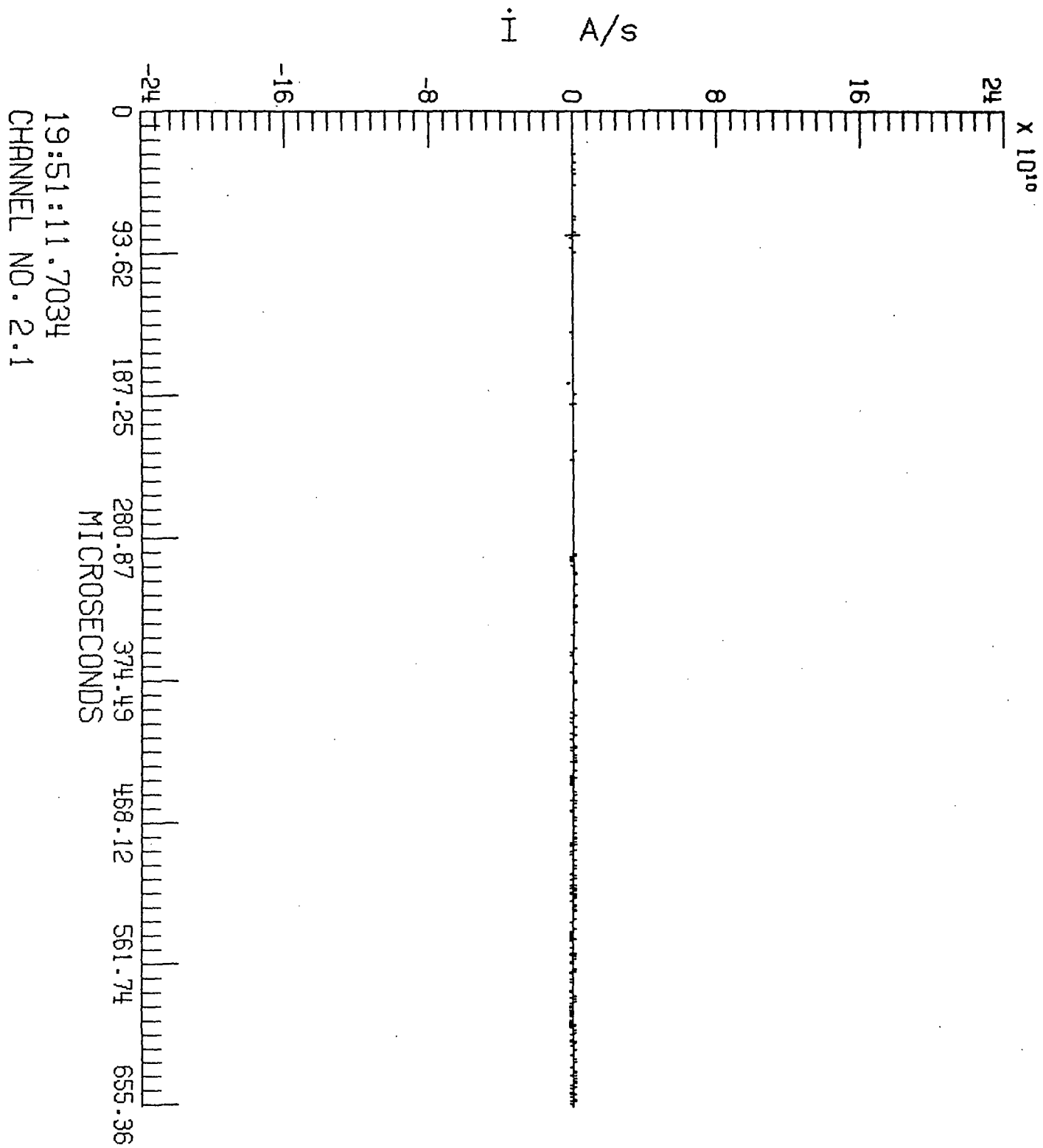


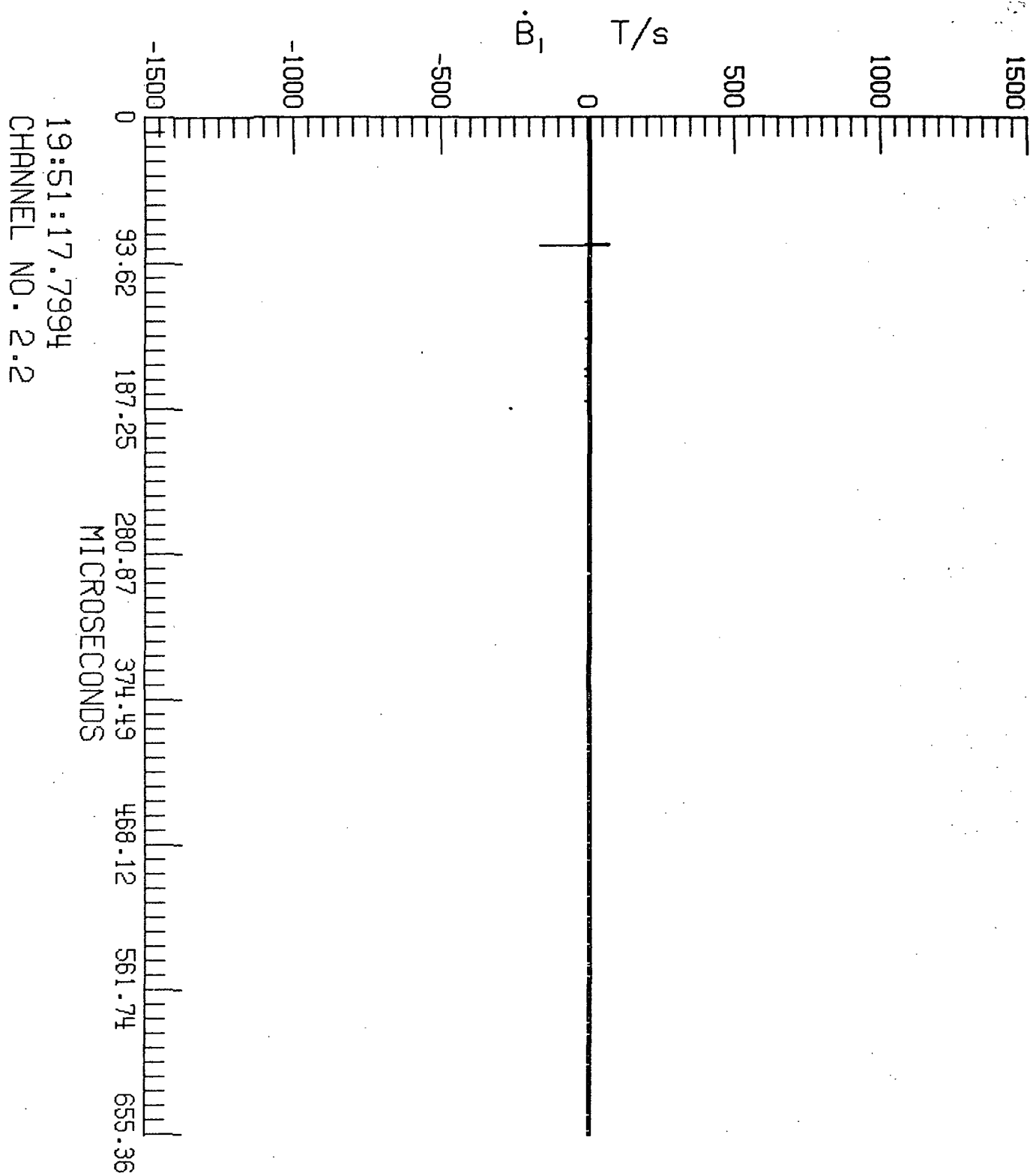
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CHANNEL NO. 4.2

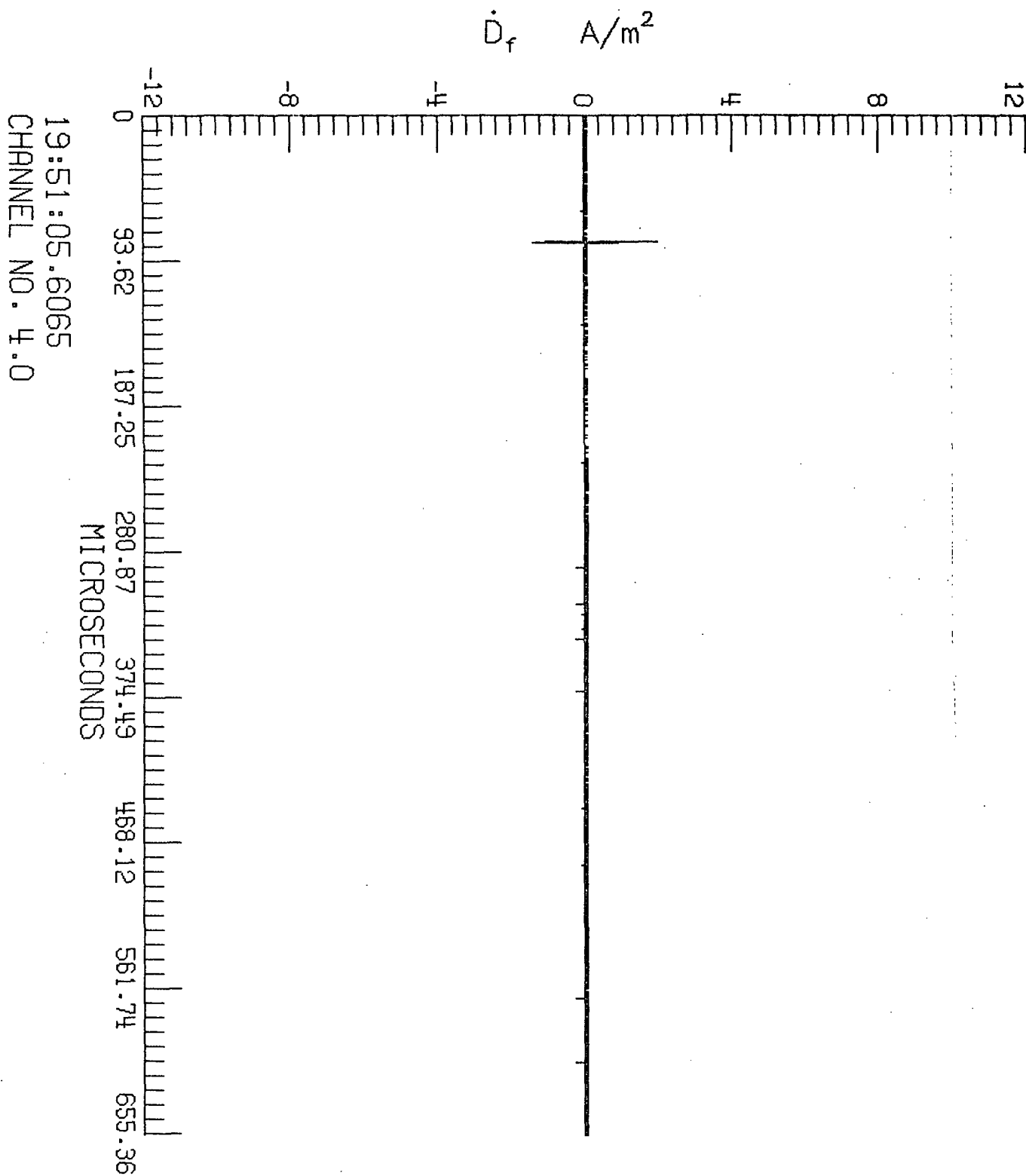
F106 LIGHTNING/TK.3/M.THOMAS

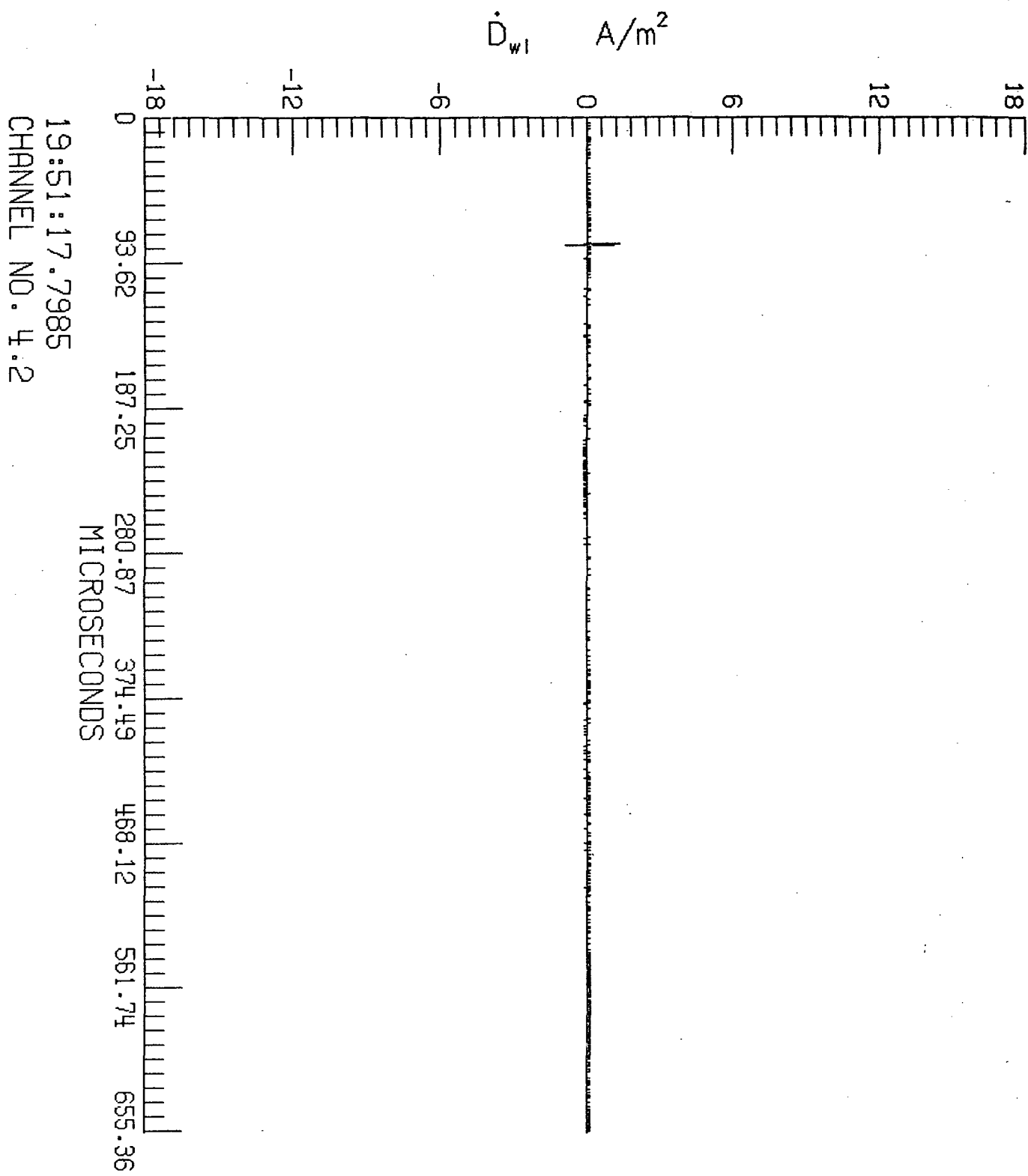
TEST NO. 83-05





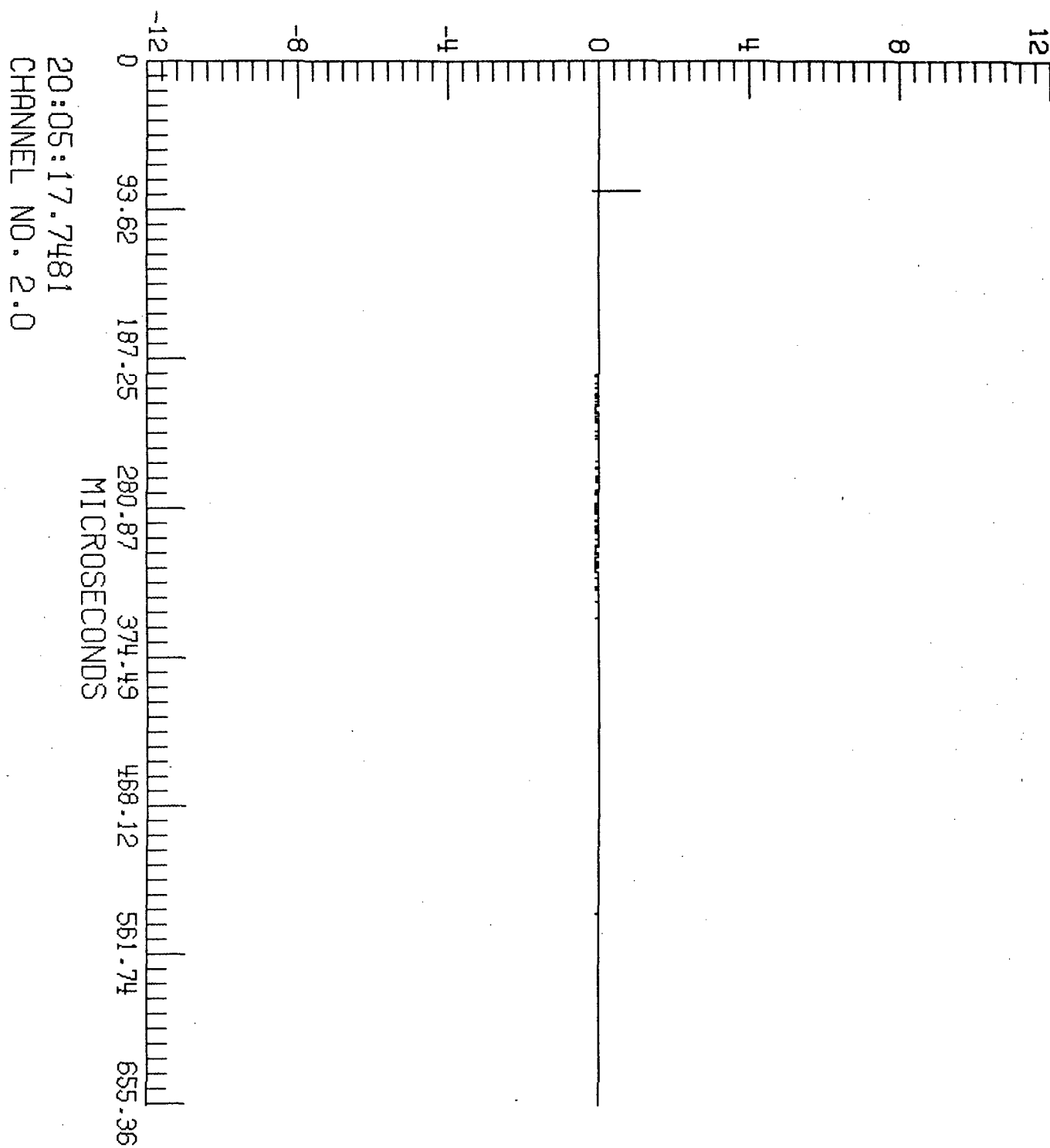






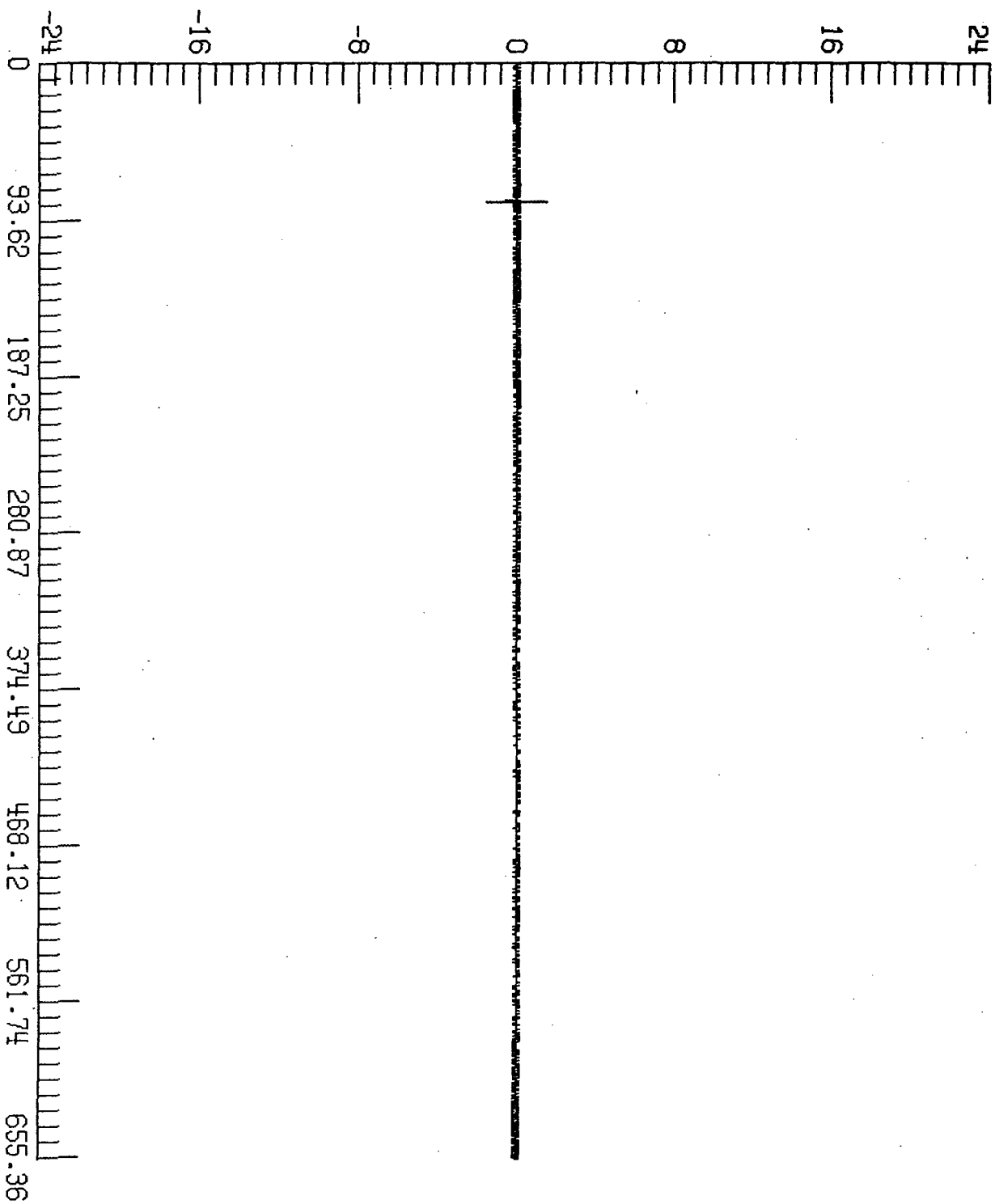


$\dot{D}_t$  A/m<sup>2</sup>



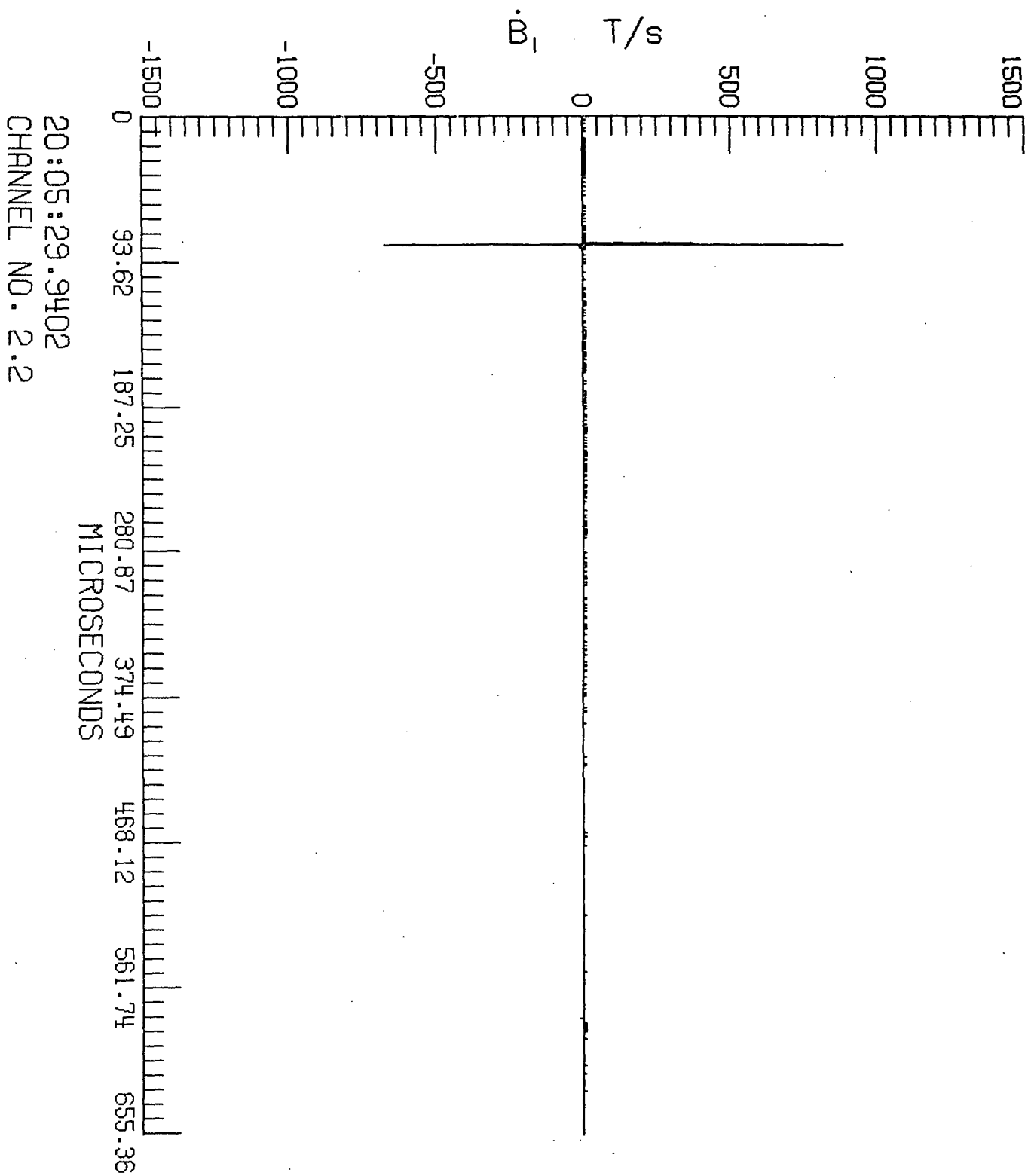
x 10<sup>10</sup>

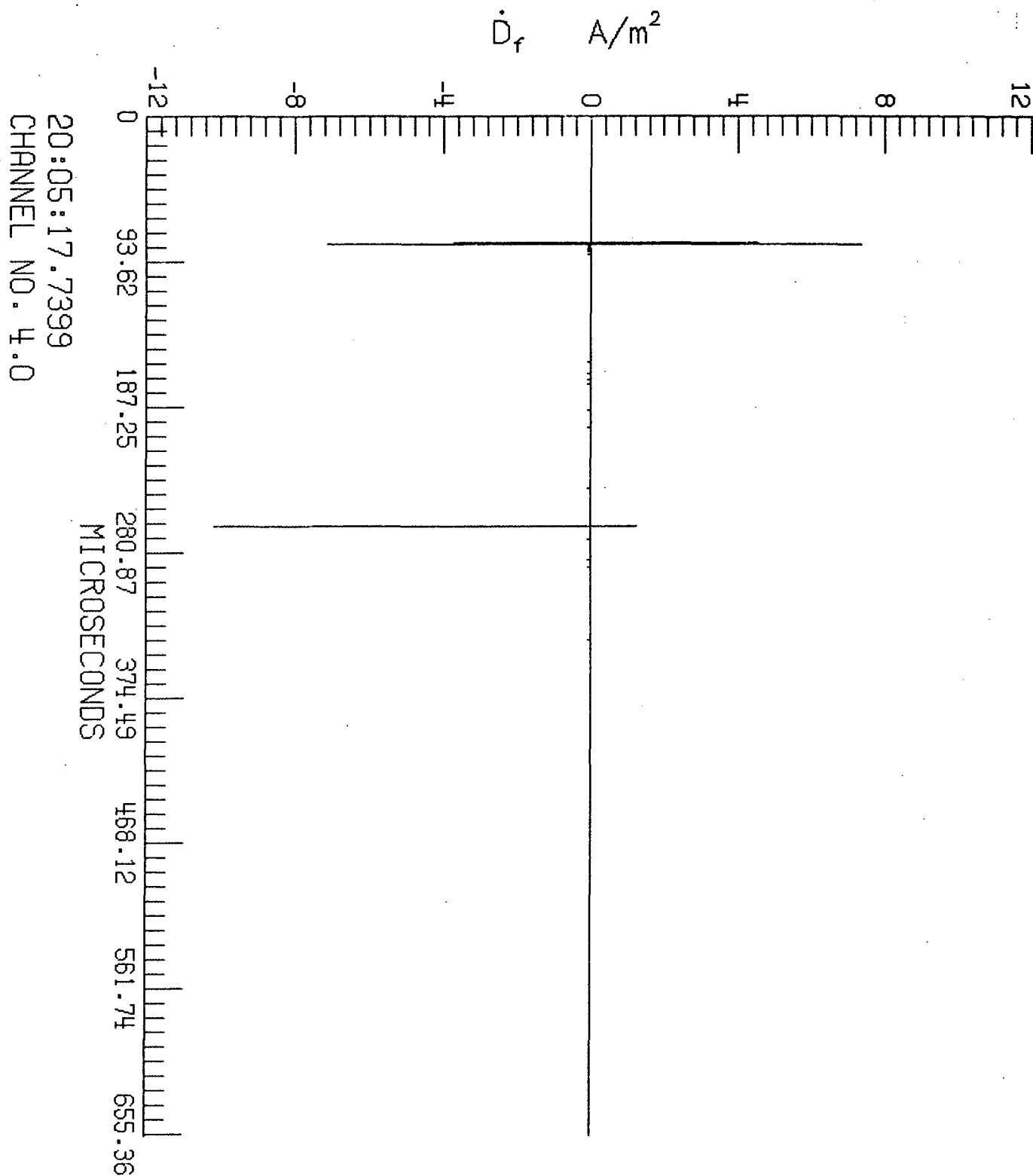
I A/s

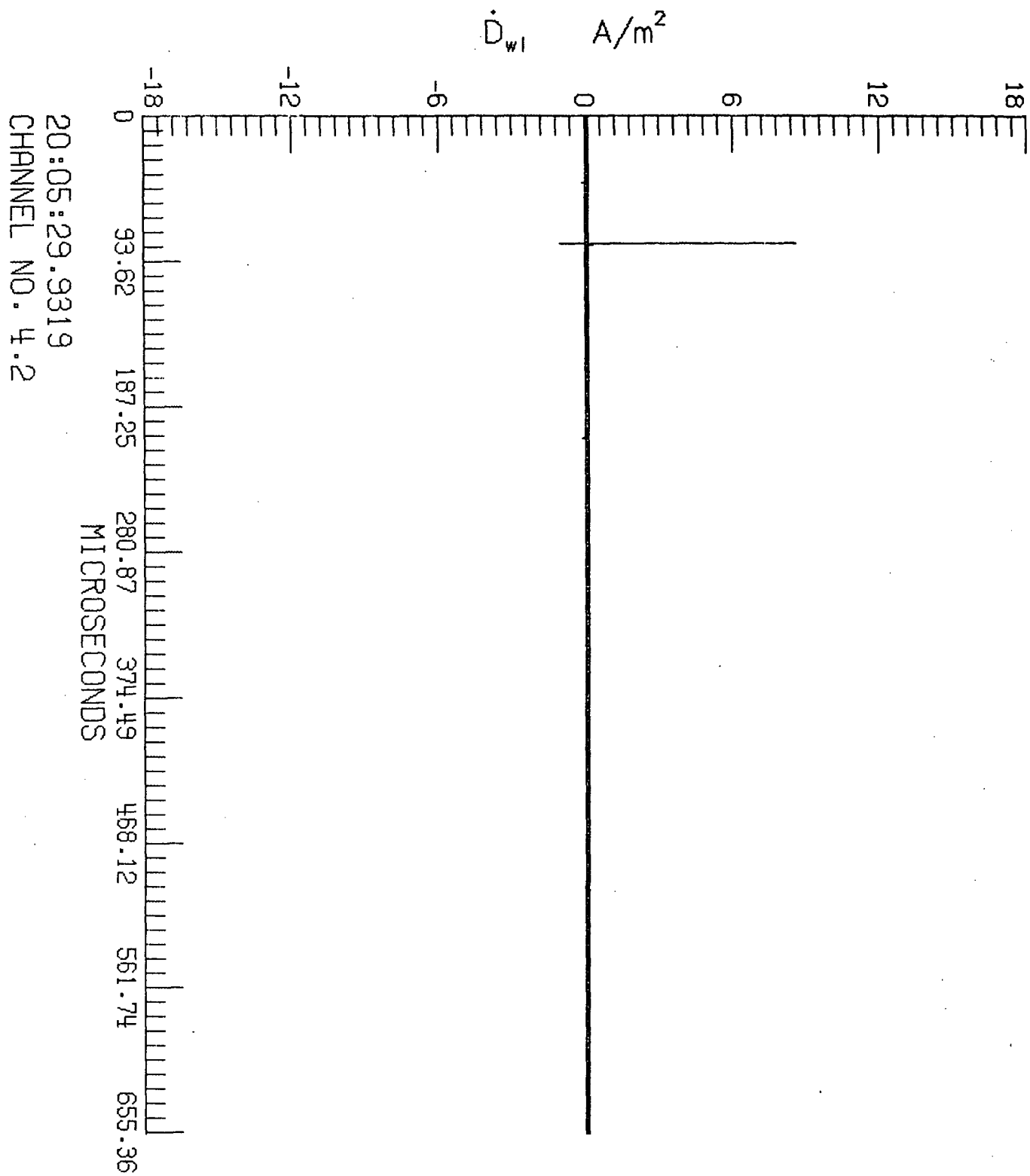


20:05:23.8441  
CHANNEL NO. 2.1

MICROSECONDS

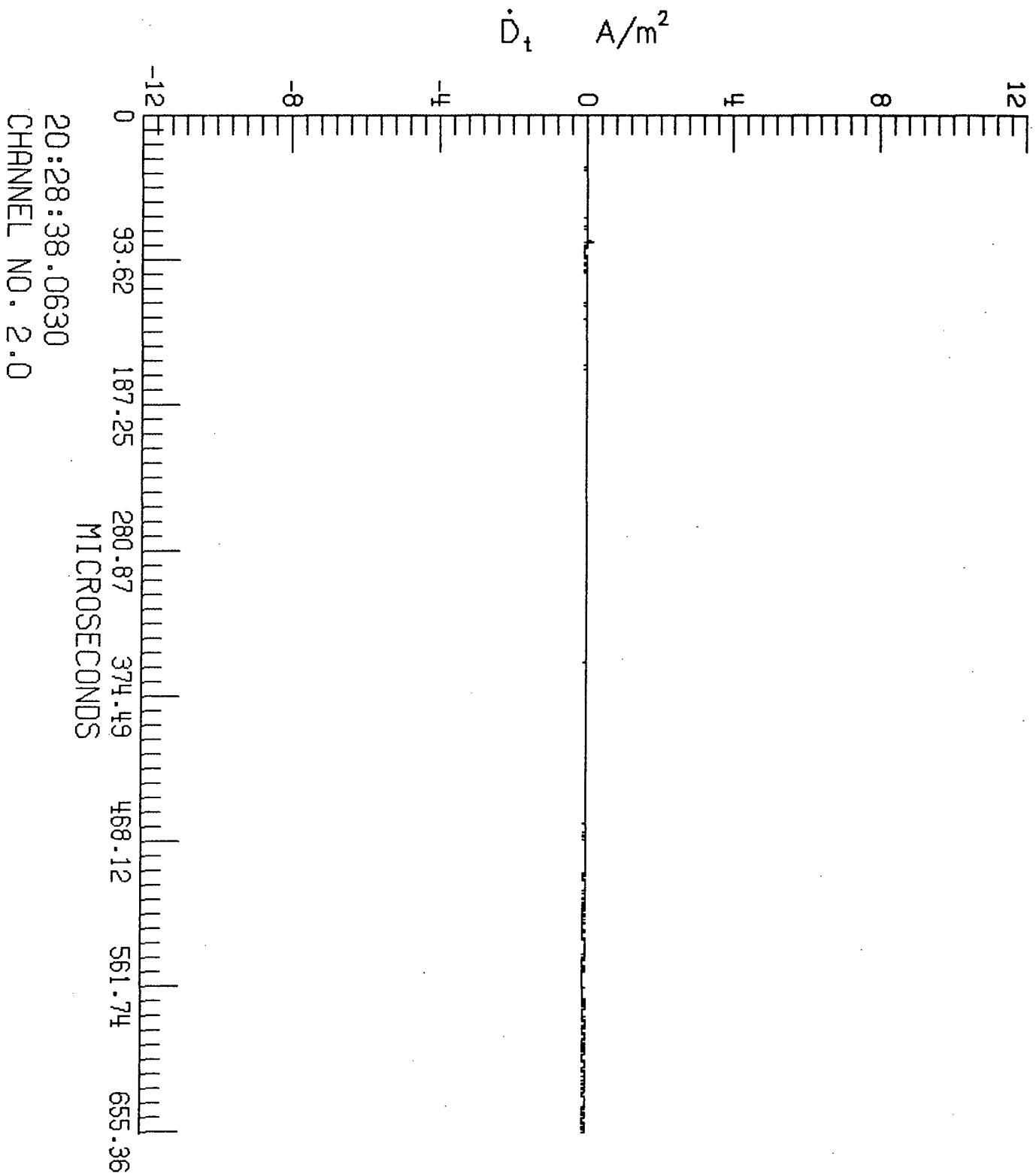


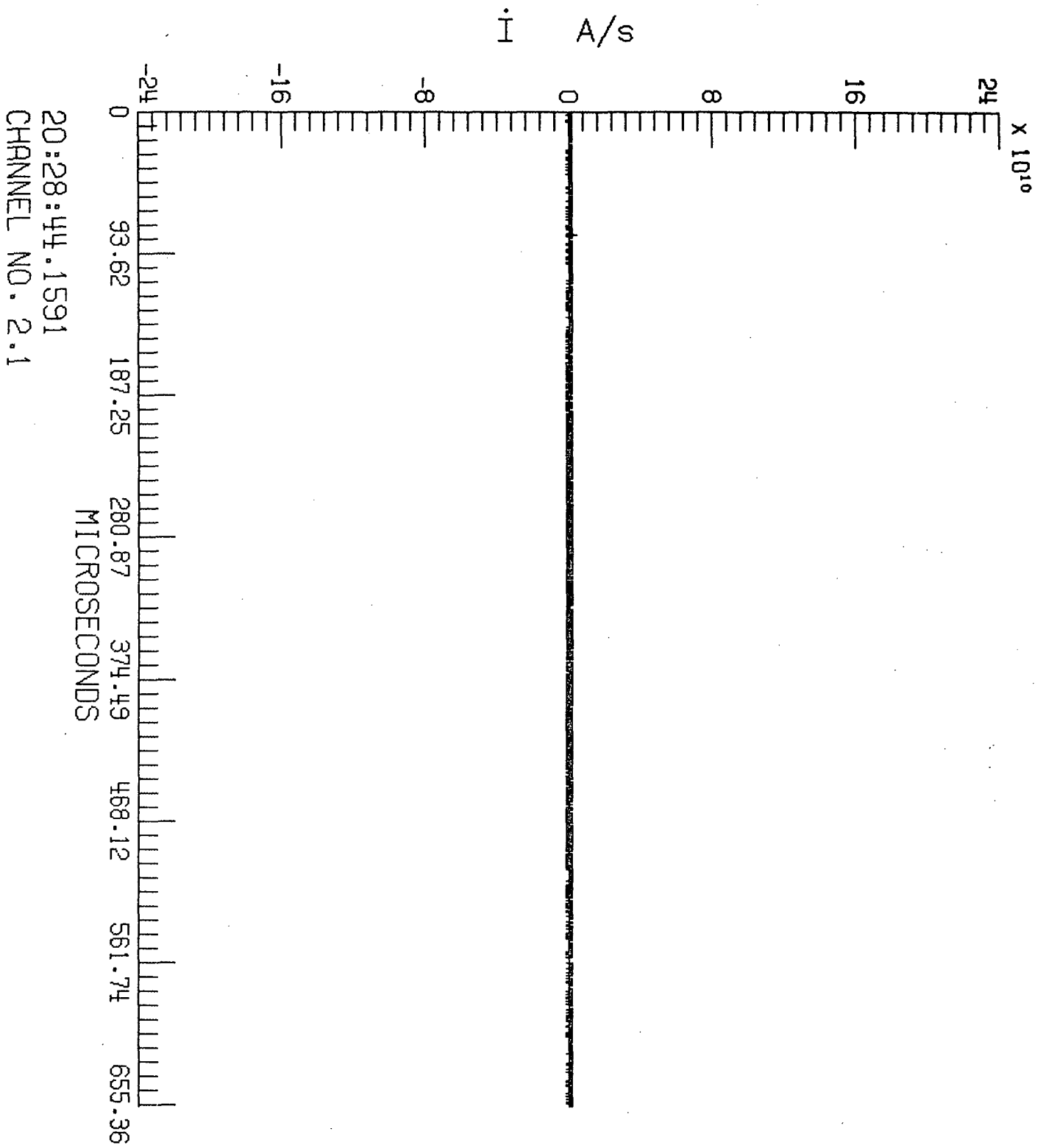


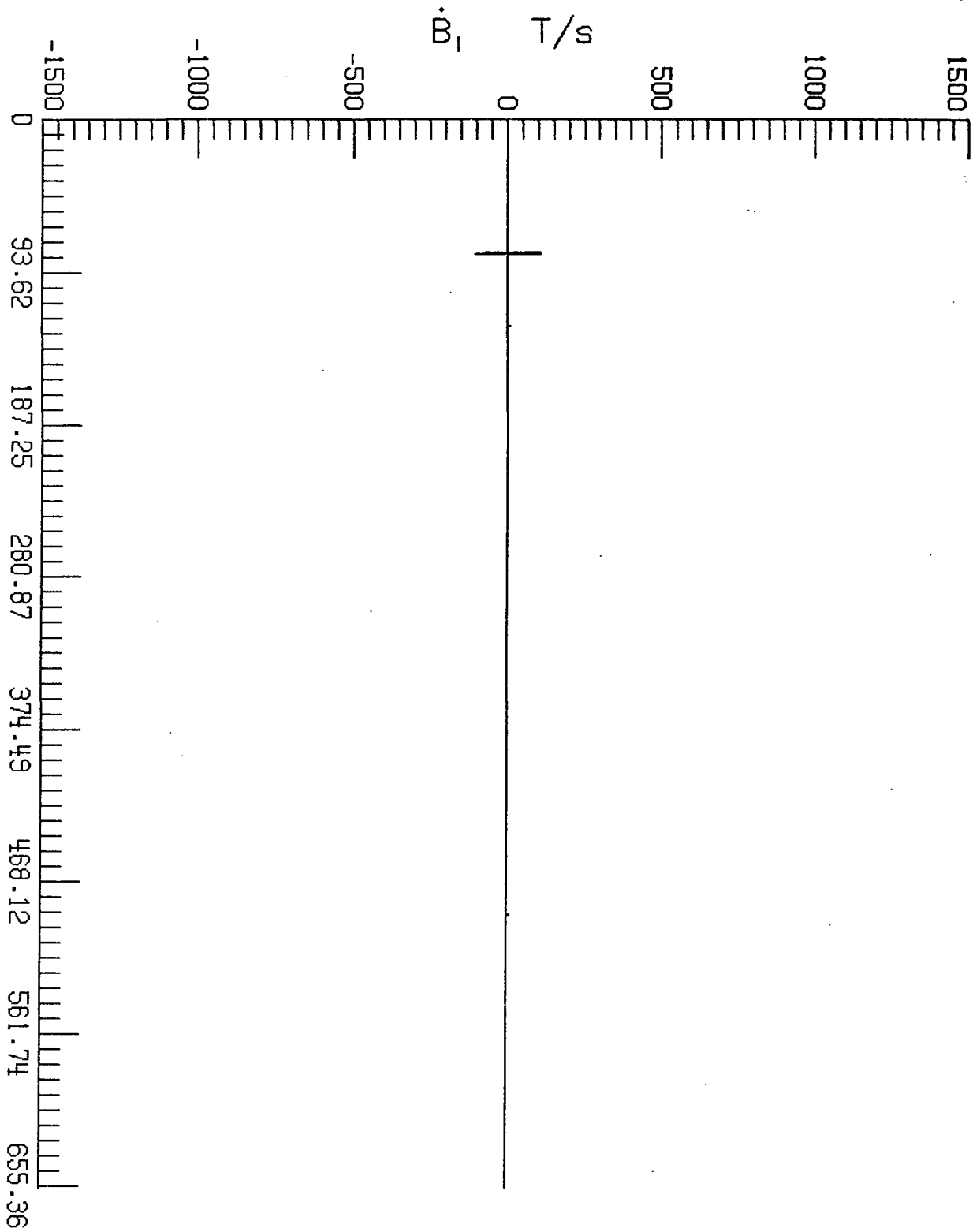


F106 LIGHTNING/TK.3/M.THOMAS

TEST NO. 83-



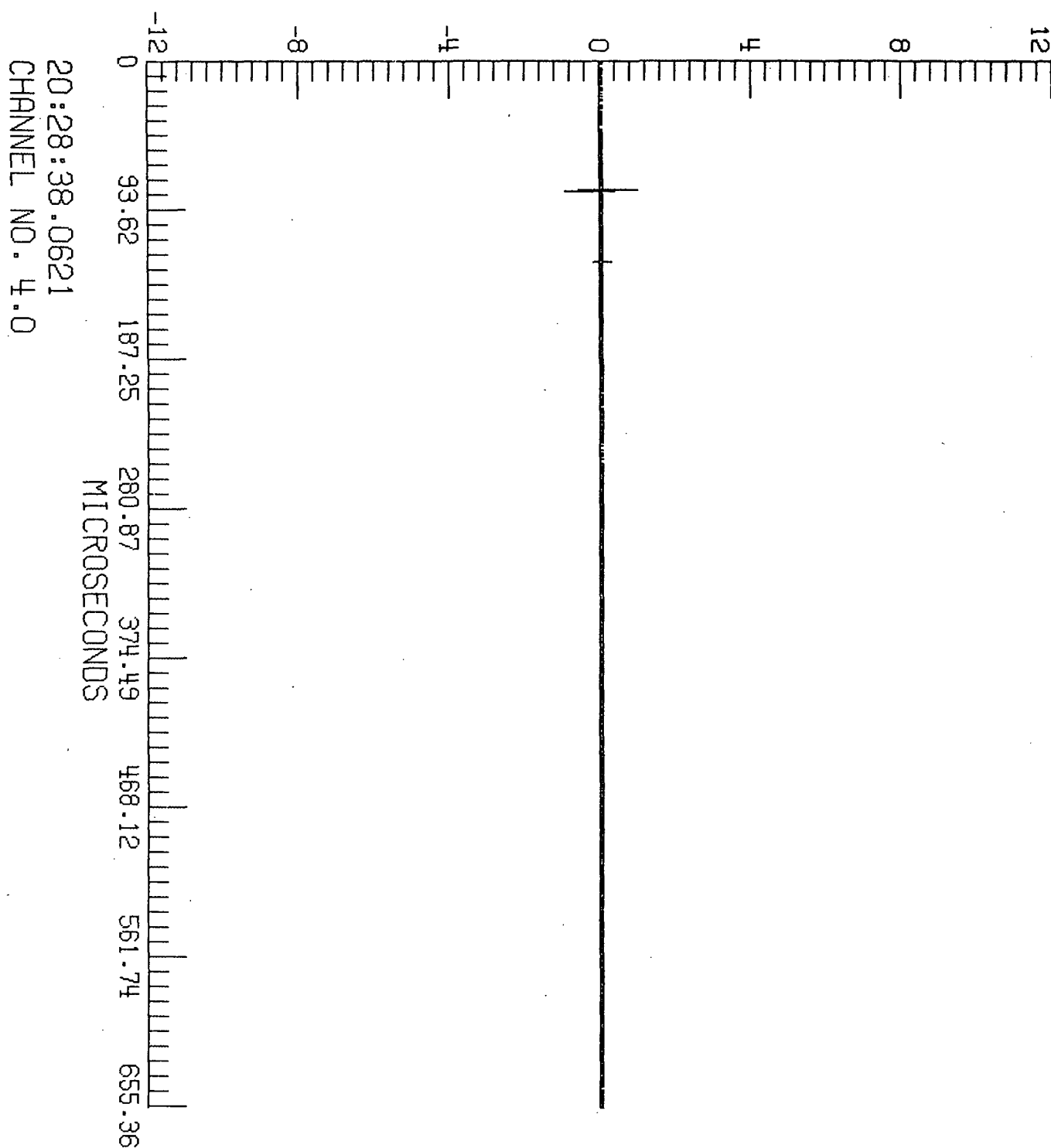


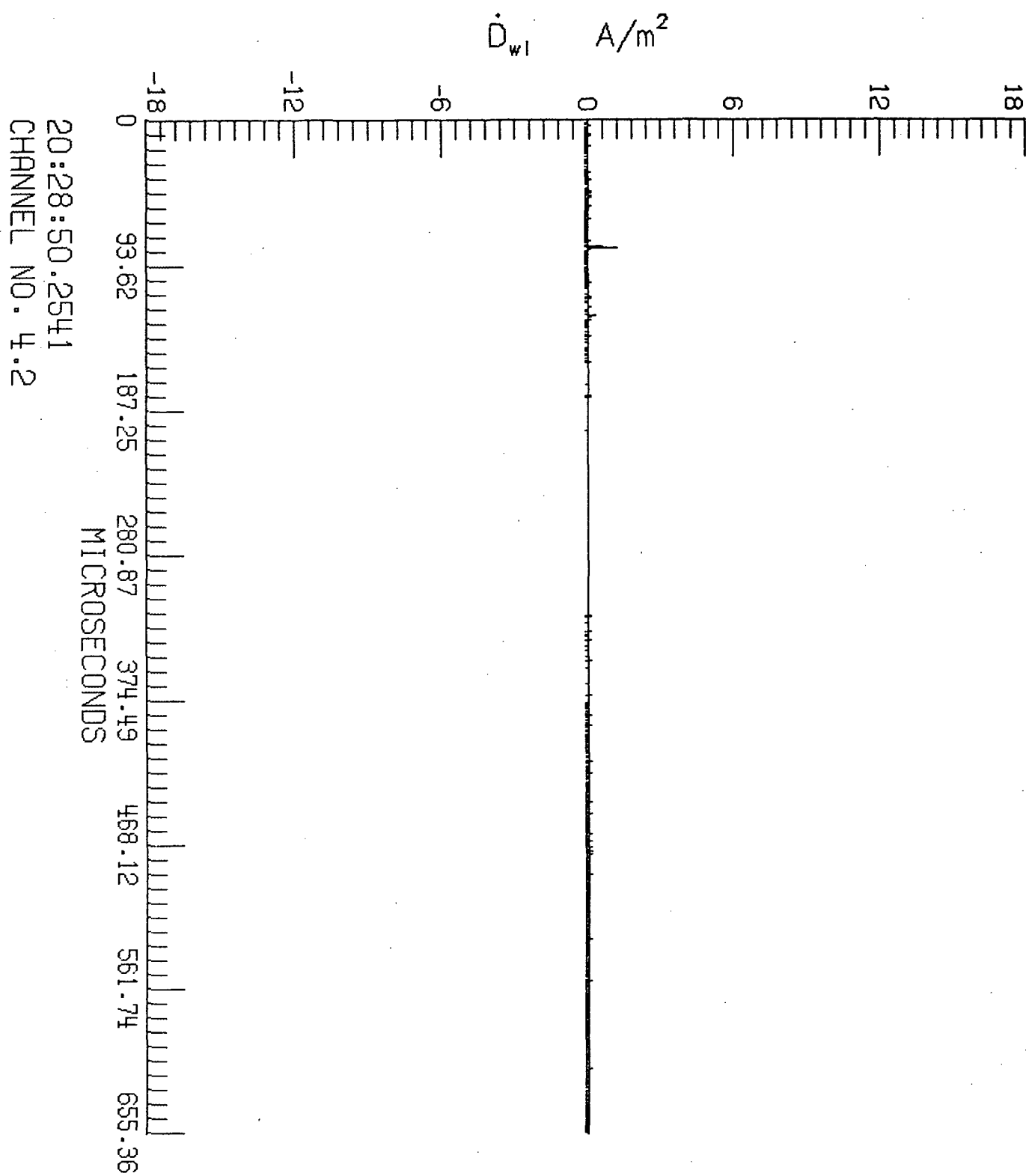


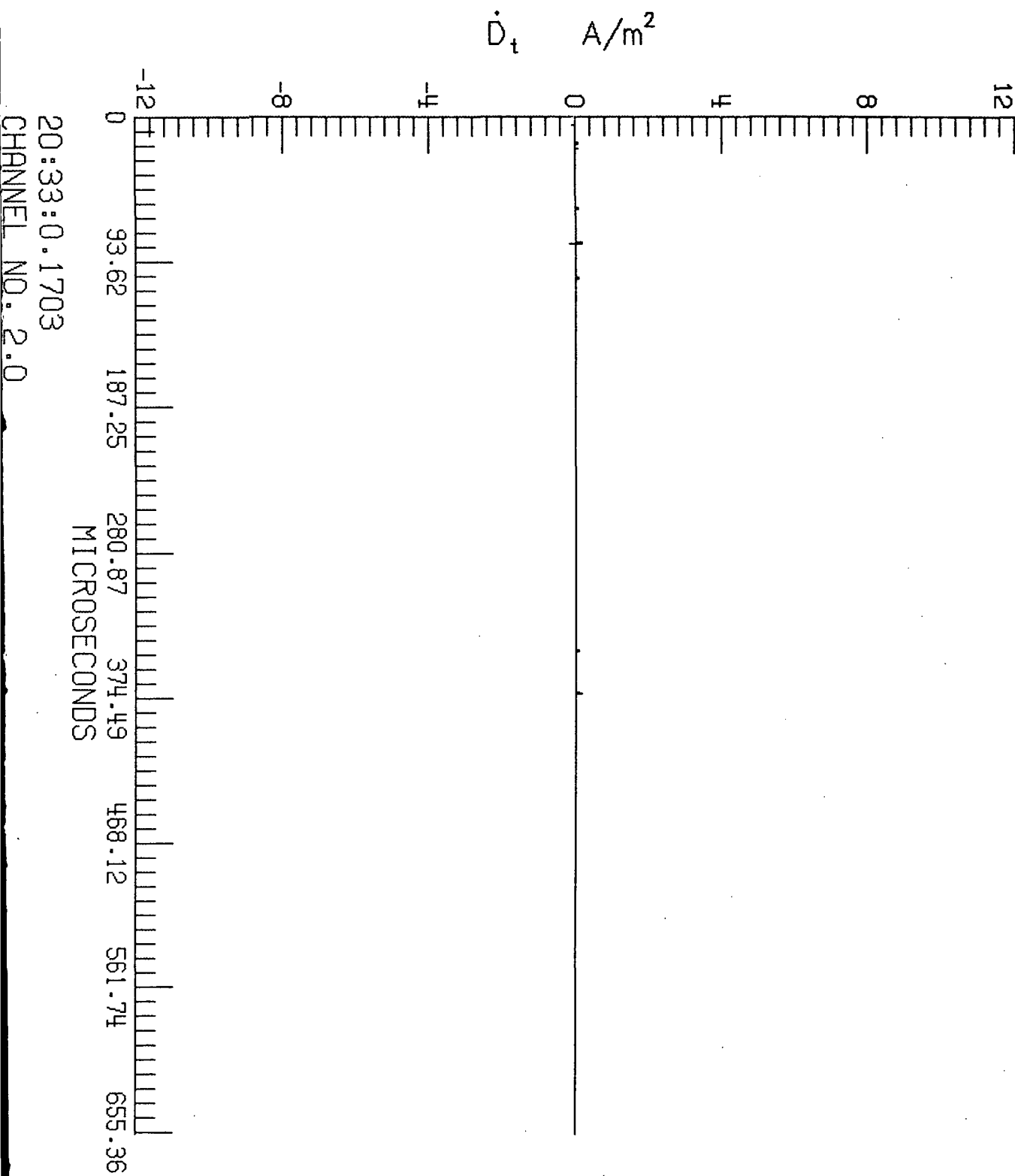
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CHANNEL NO. 2.2

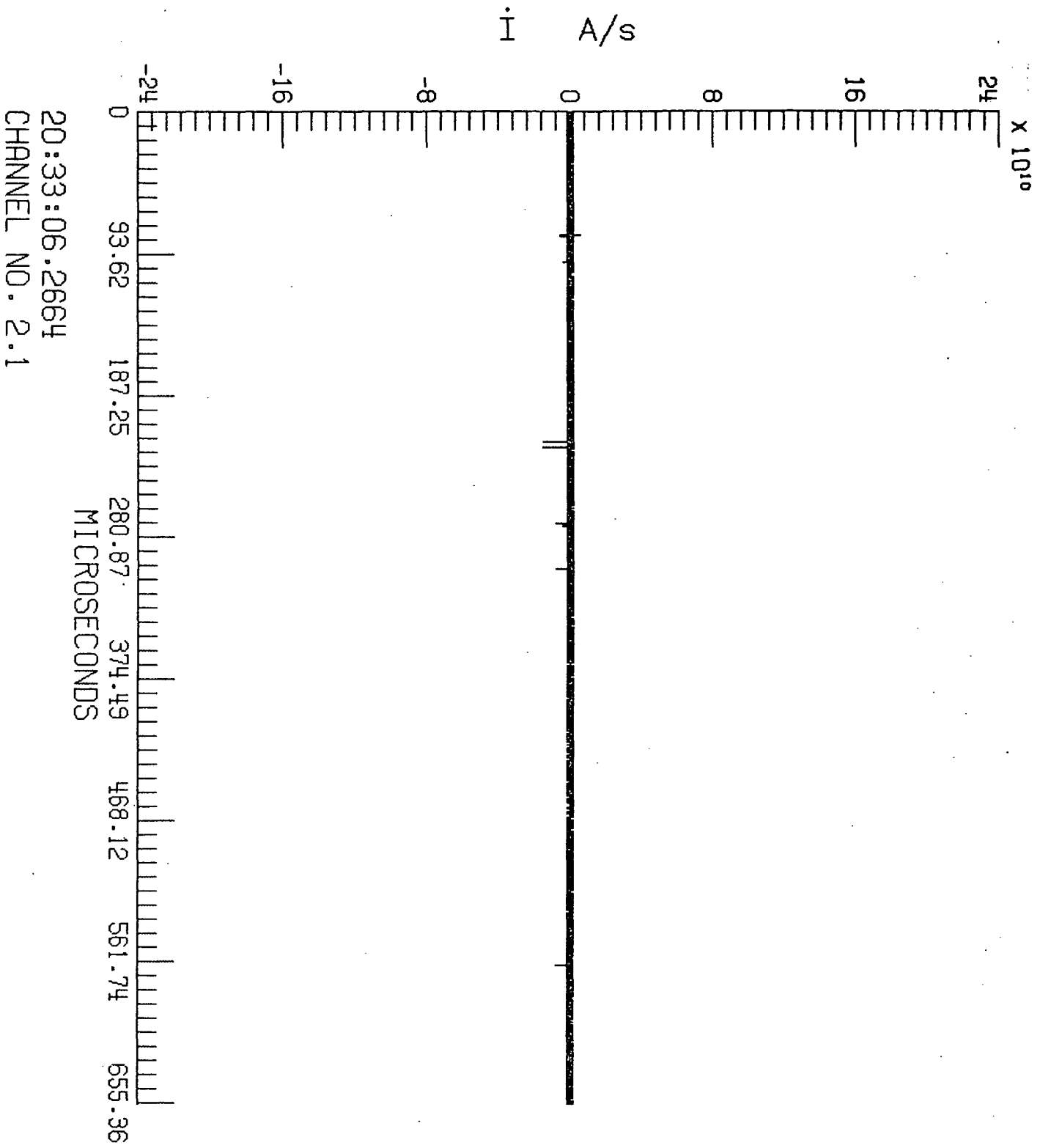


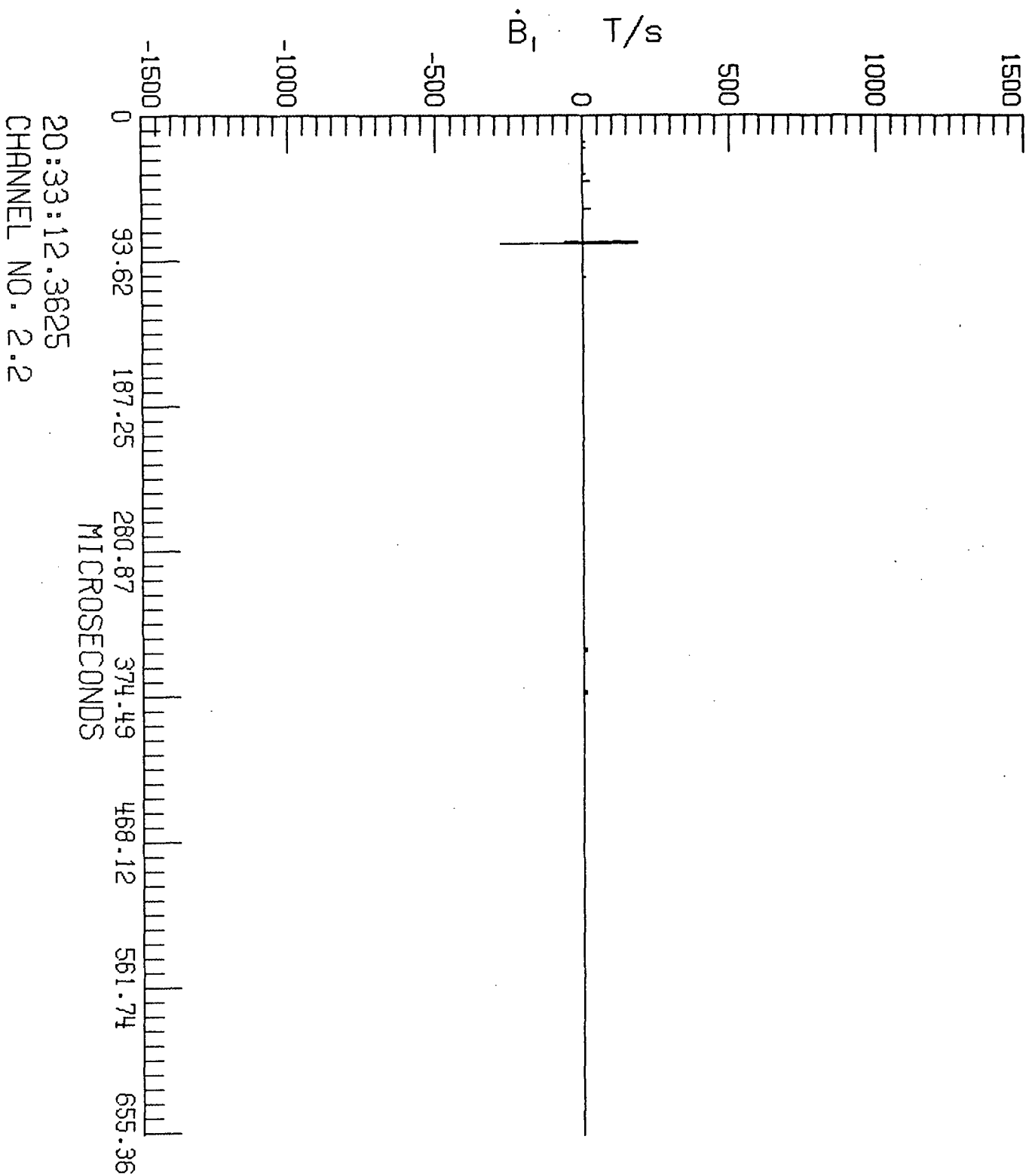
$\dot{D}_f$  A/m<sup>2</sup>

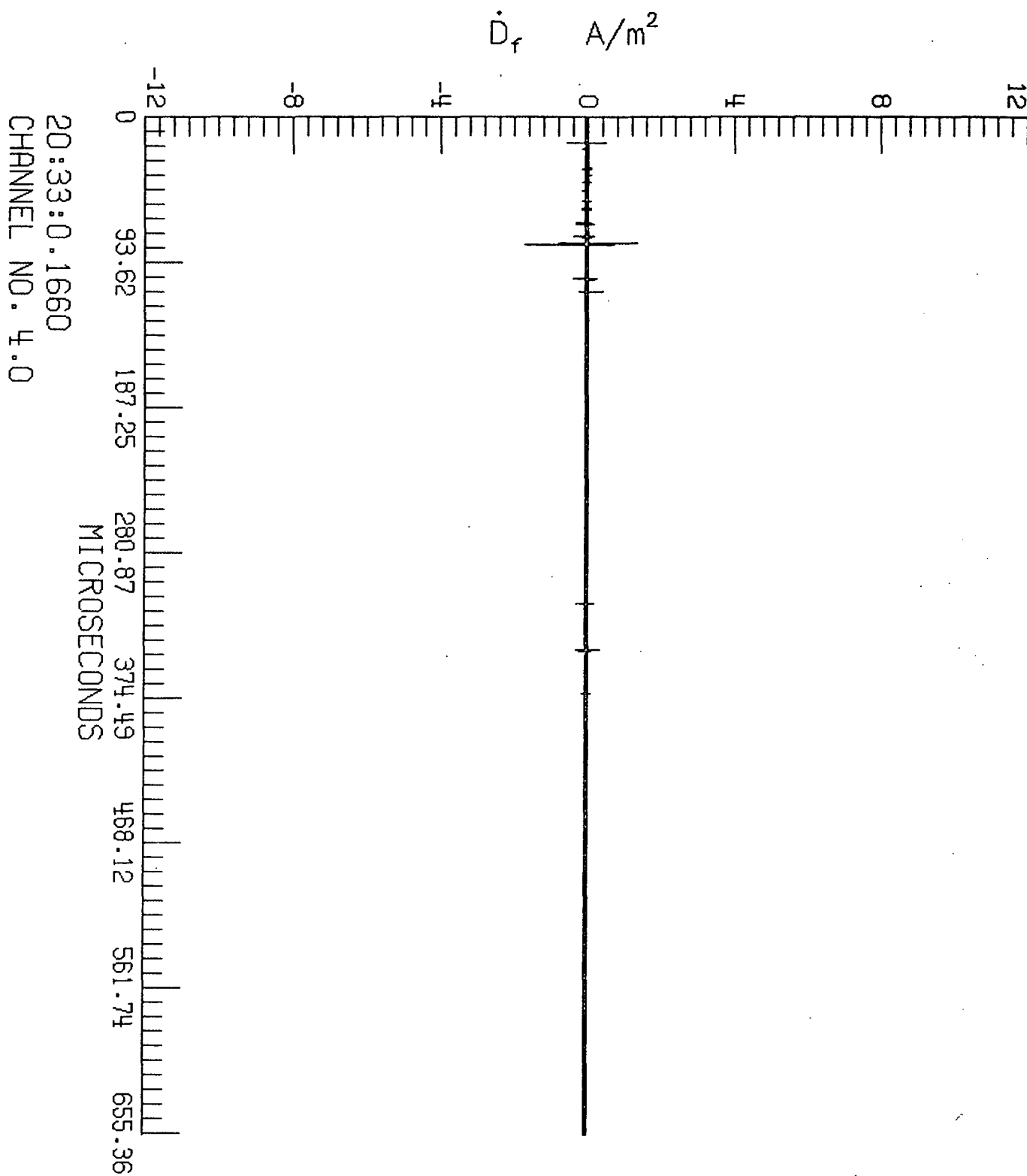




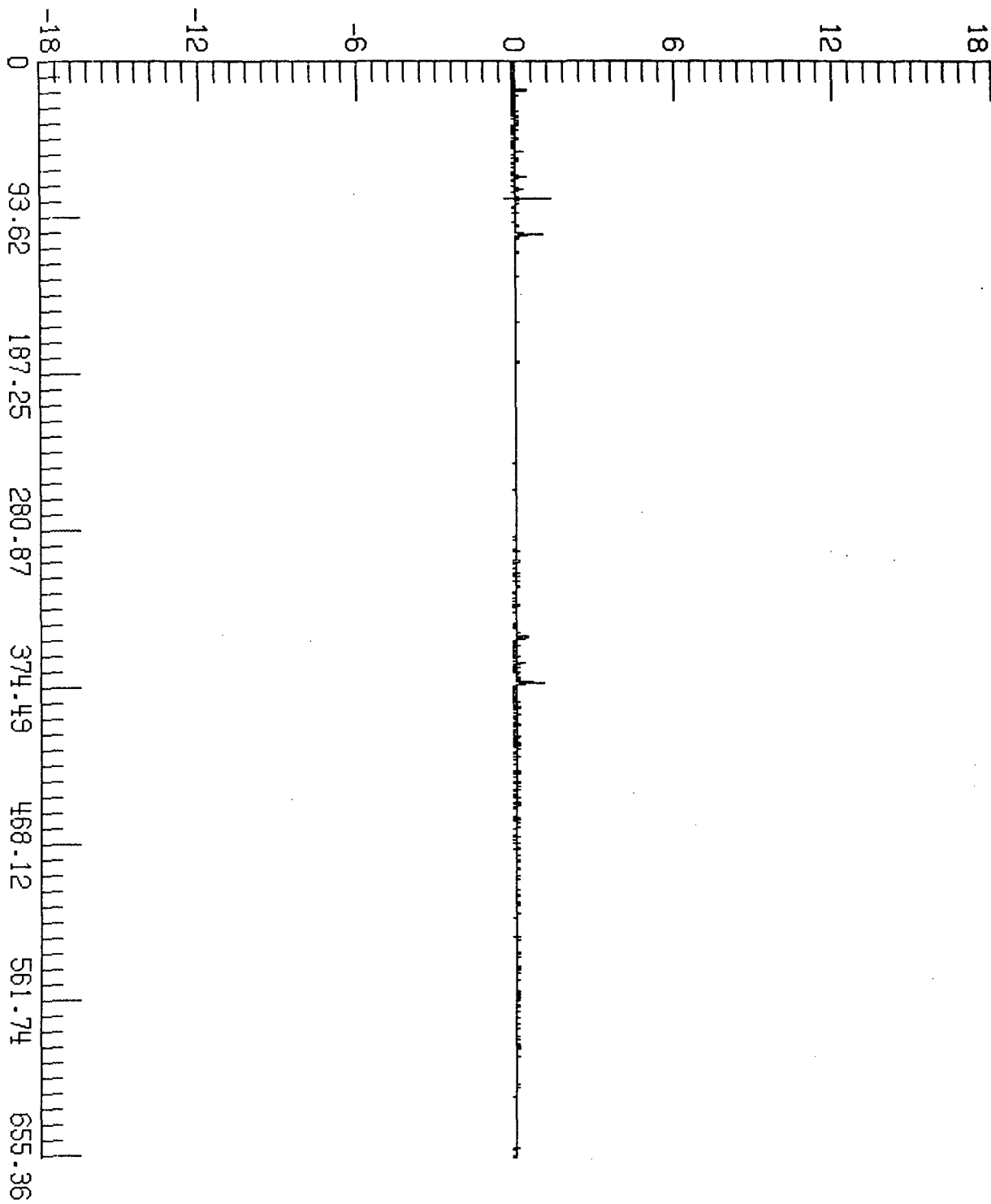




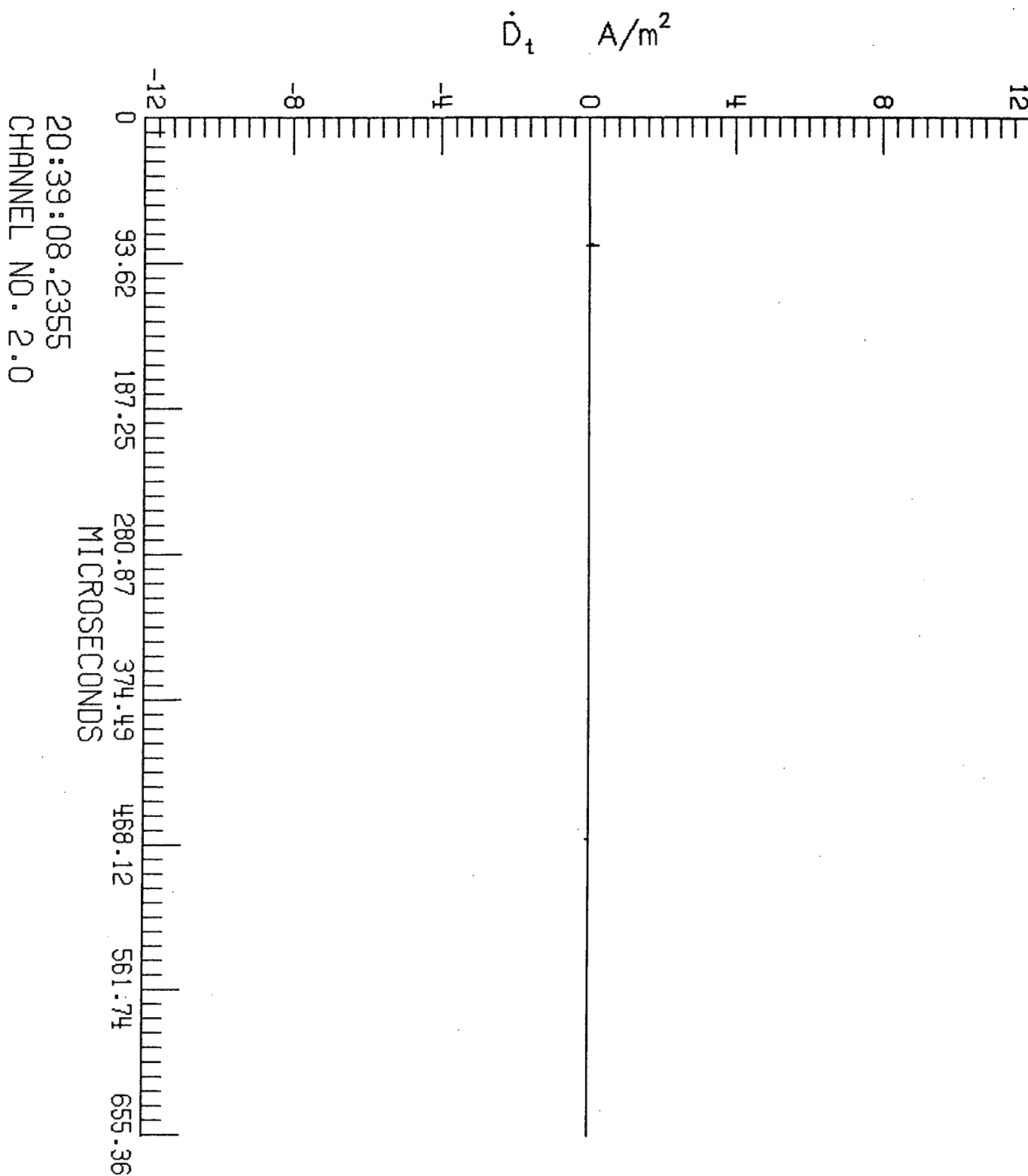




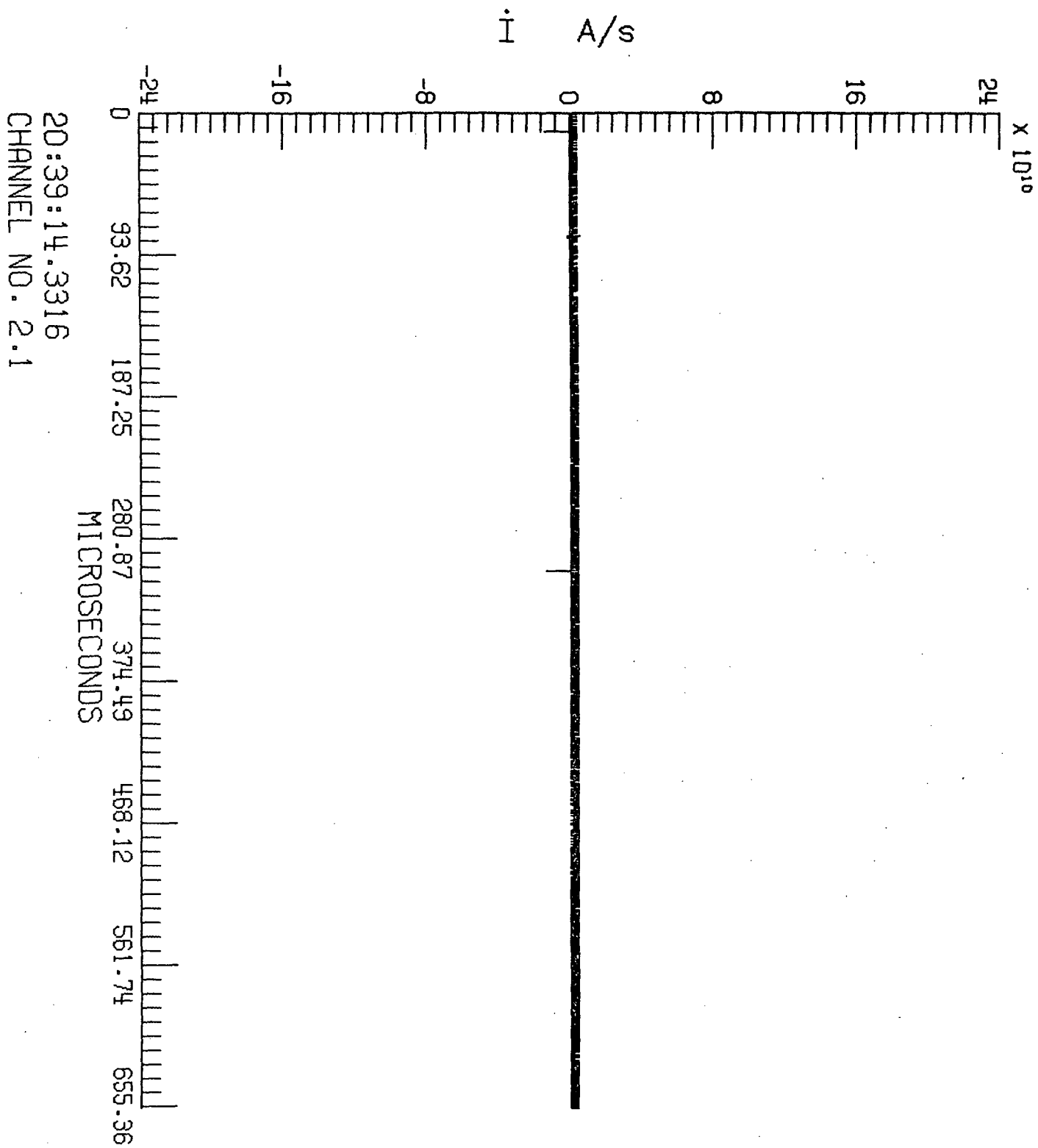
$\dot{D}_{wl}$   $A/m^2$

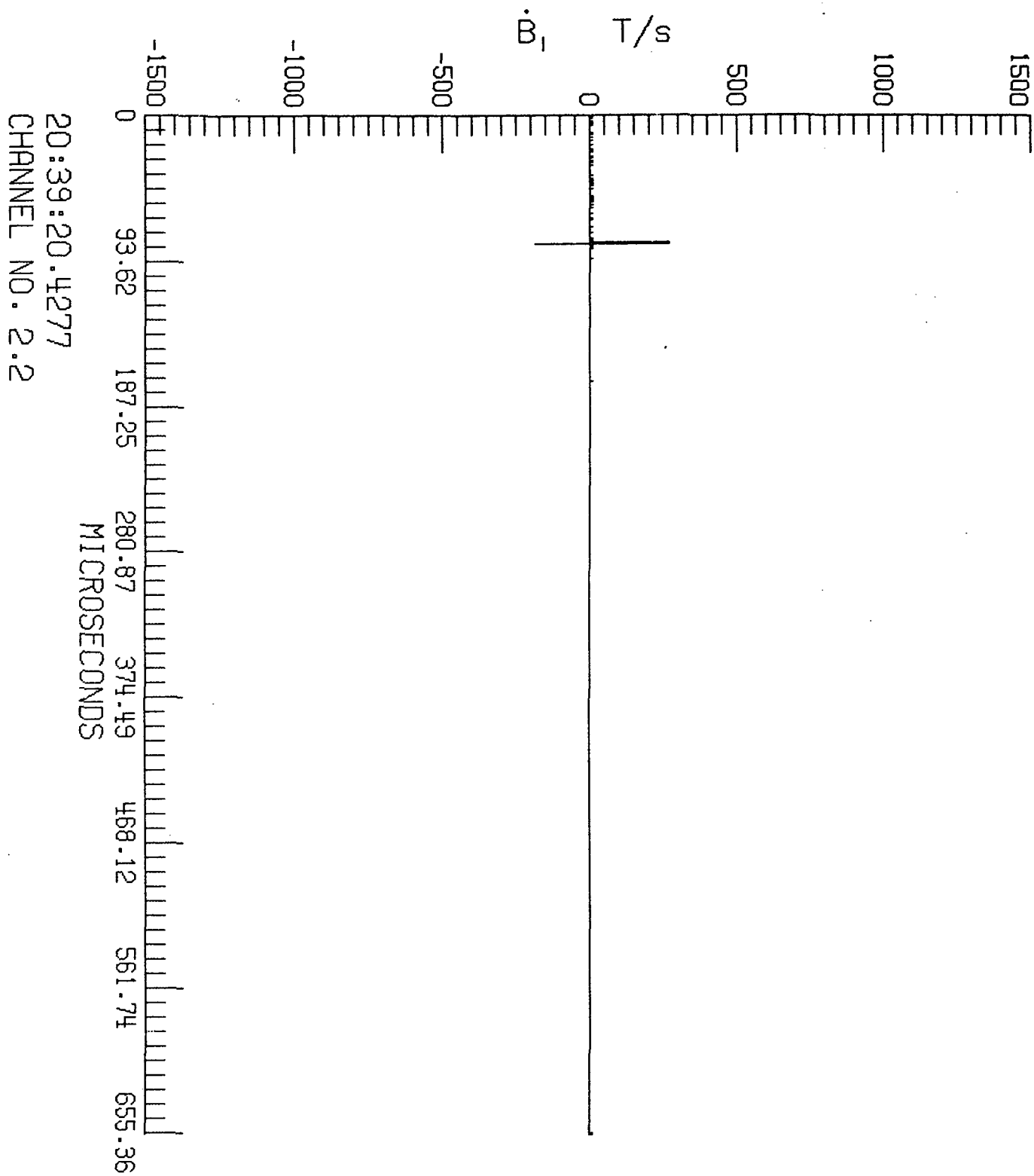


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CHANNEL NO. 4.2

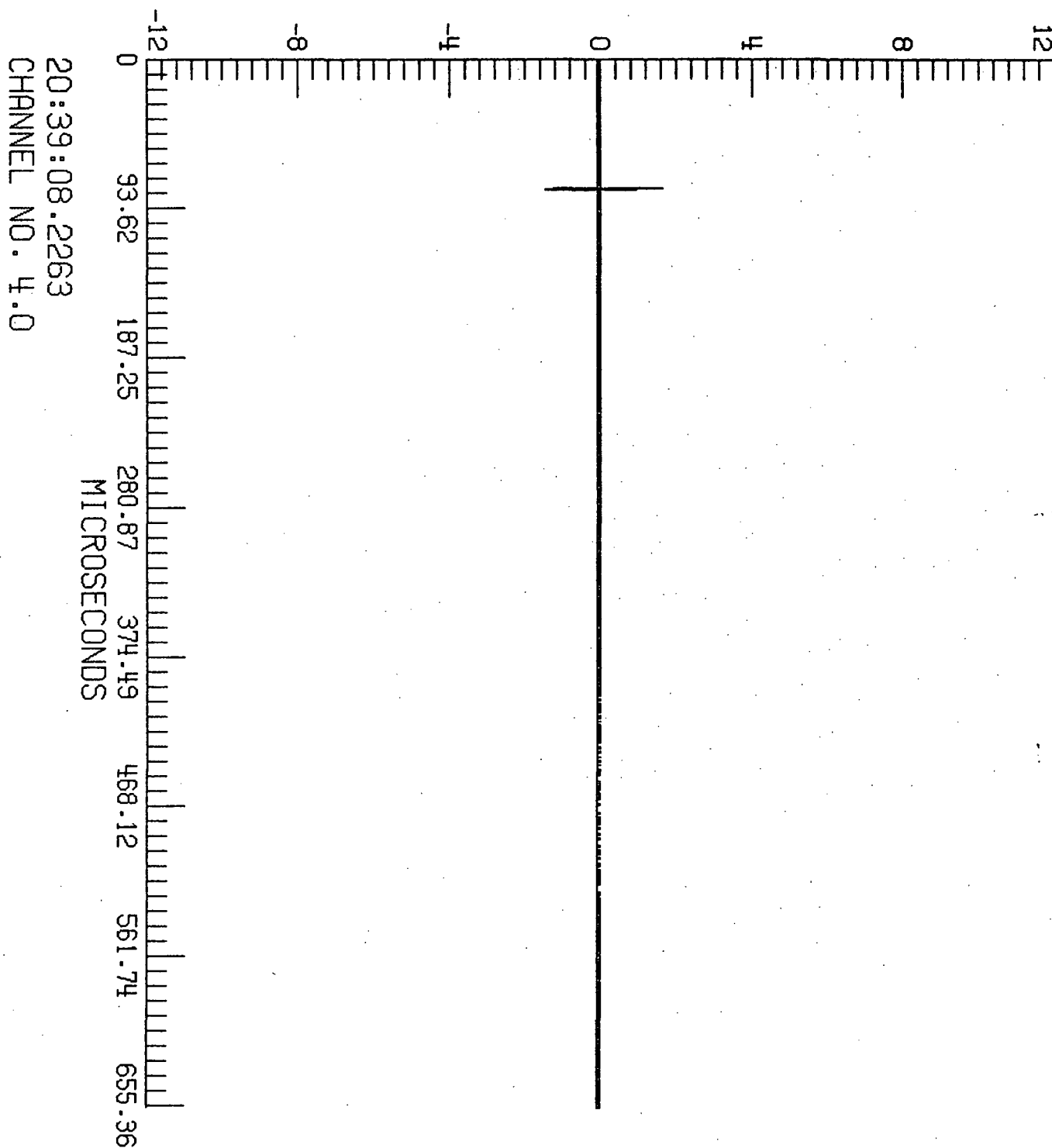


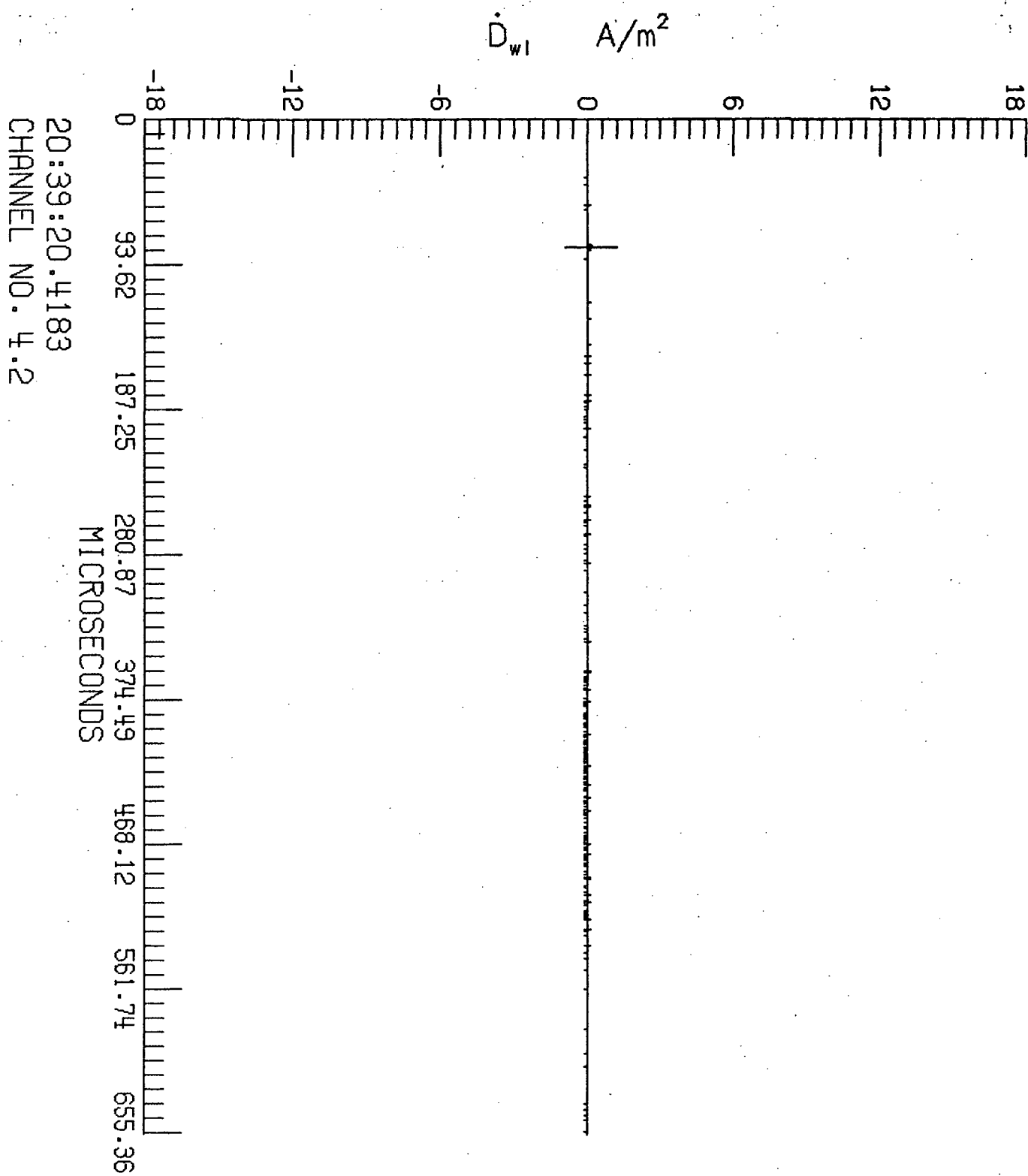


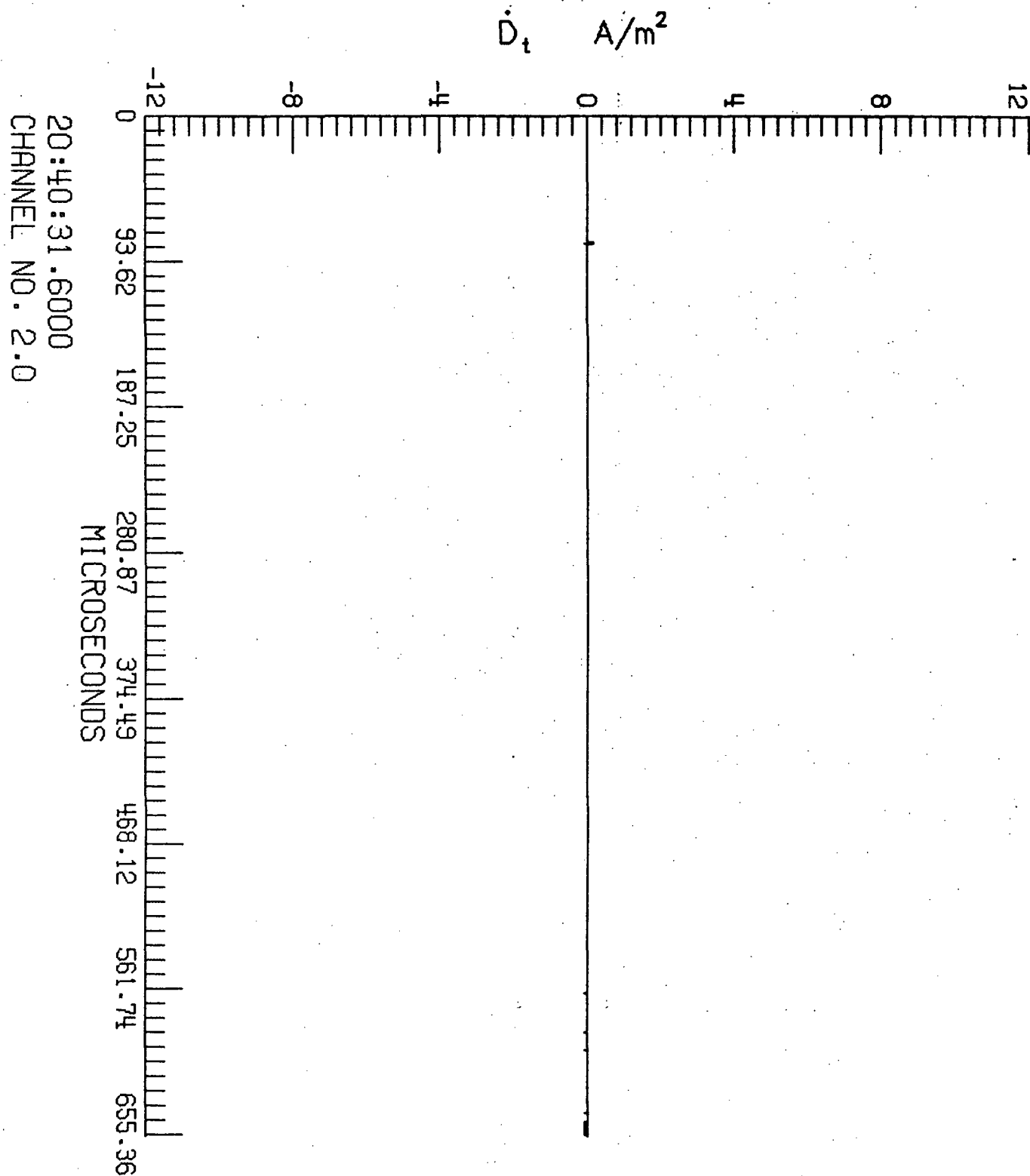




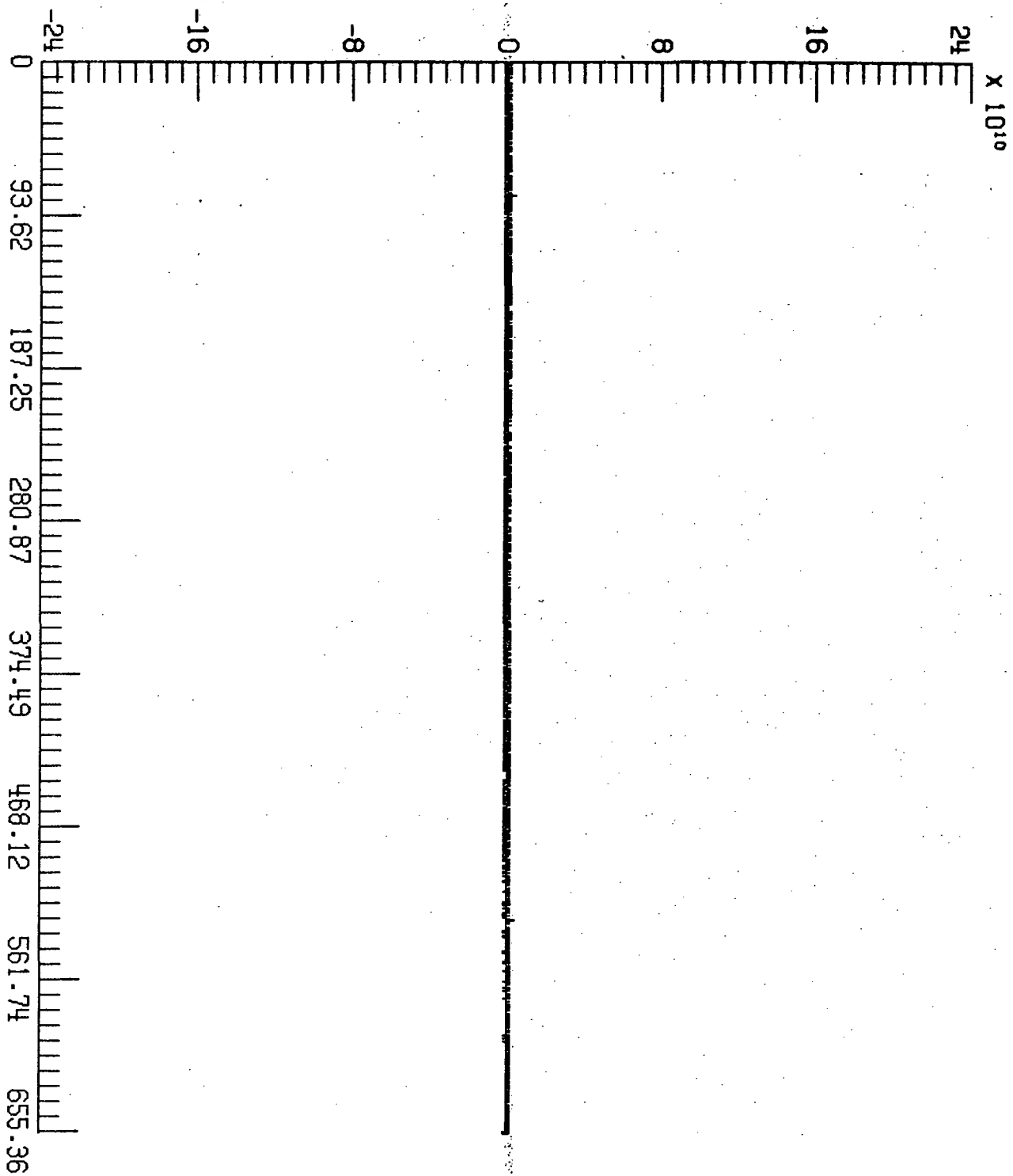
$\dot{D}_f$  A/m<sup>2</sup>







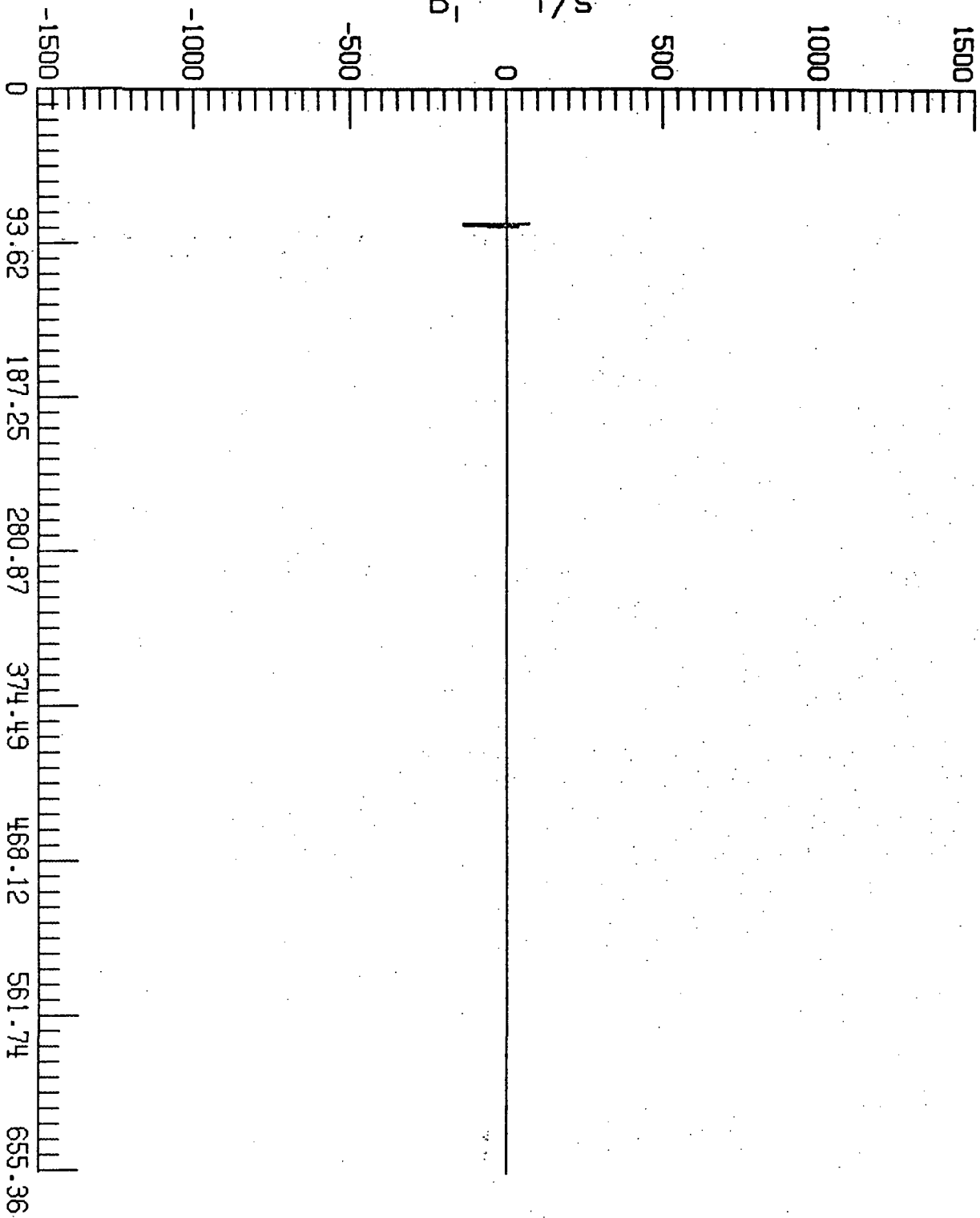
I A/s



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CHANNEL NO. 2.1

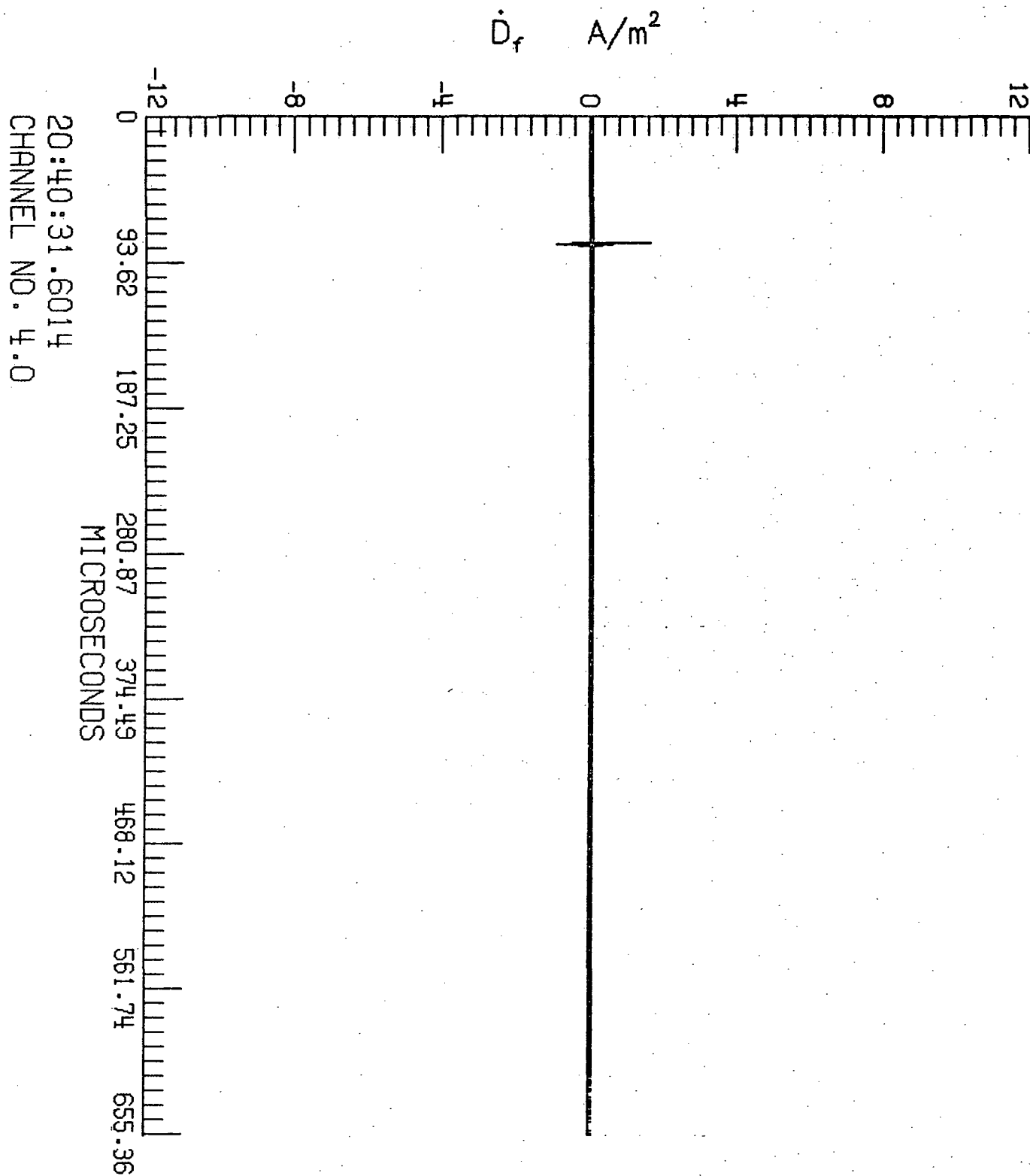
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CHANNEL NO. 2.2

MICROSECONDS

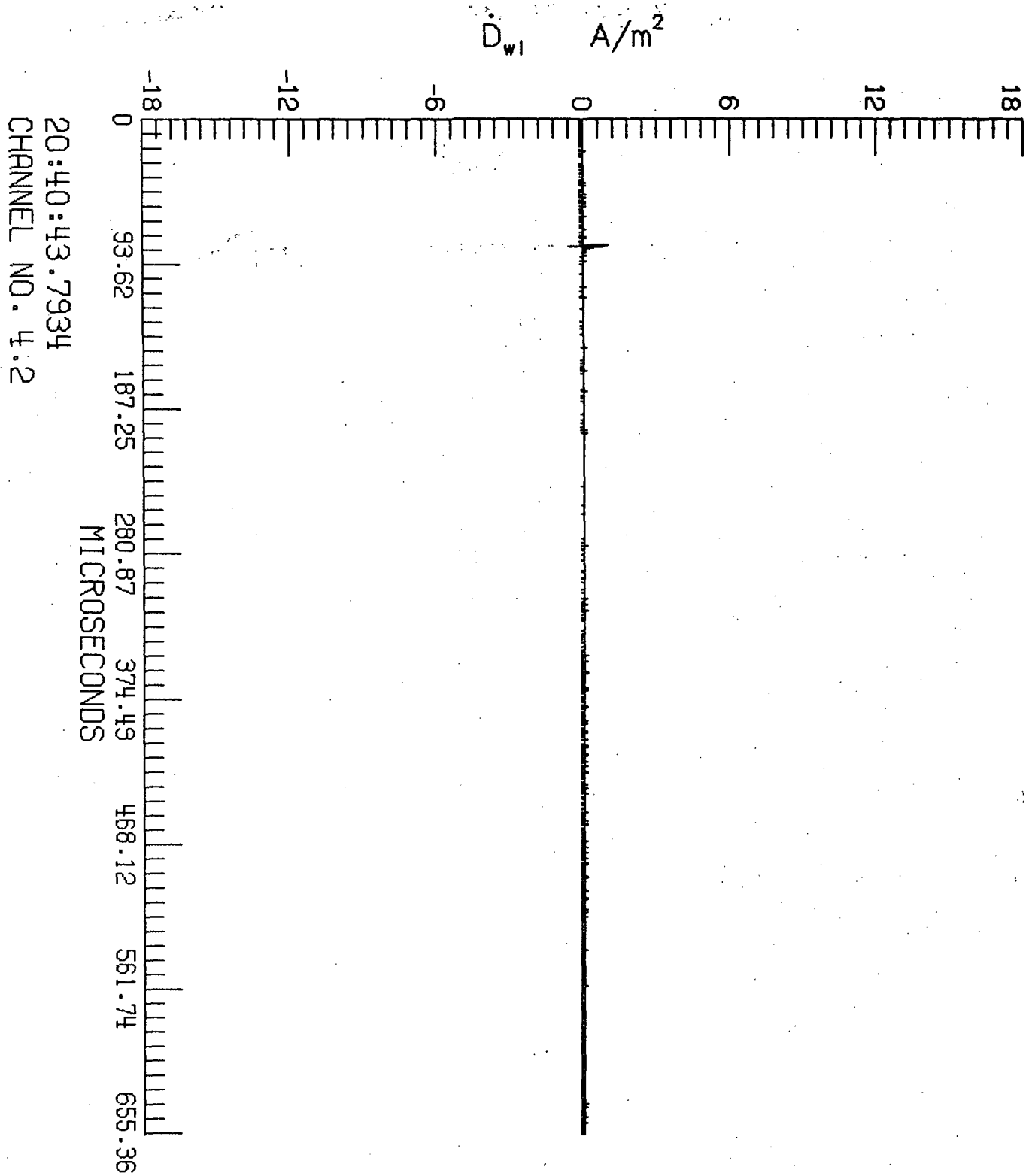


F106 LIGHTNING/TK.5/M.THOMAS

TEST NO. 83



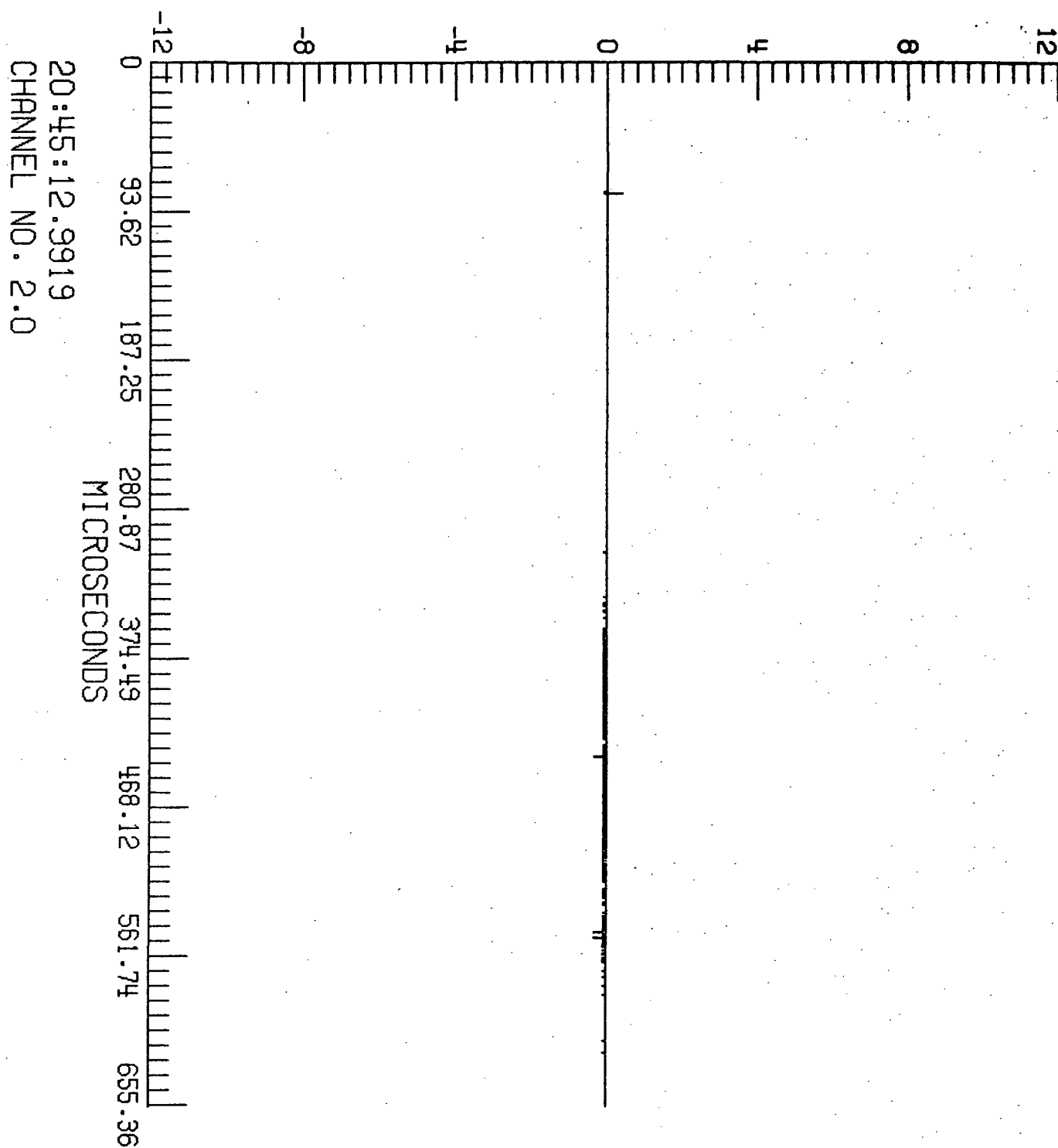




F106 LIGHTNING/TK.3/M.THOMAS

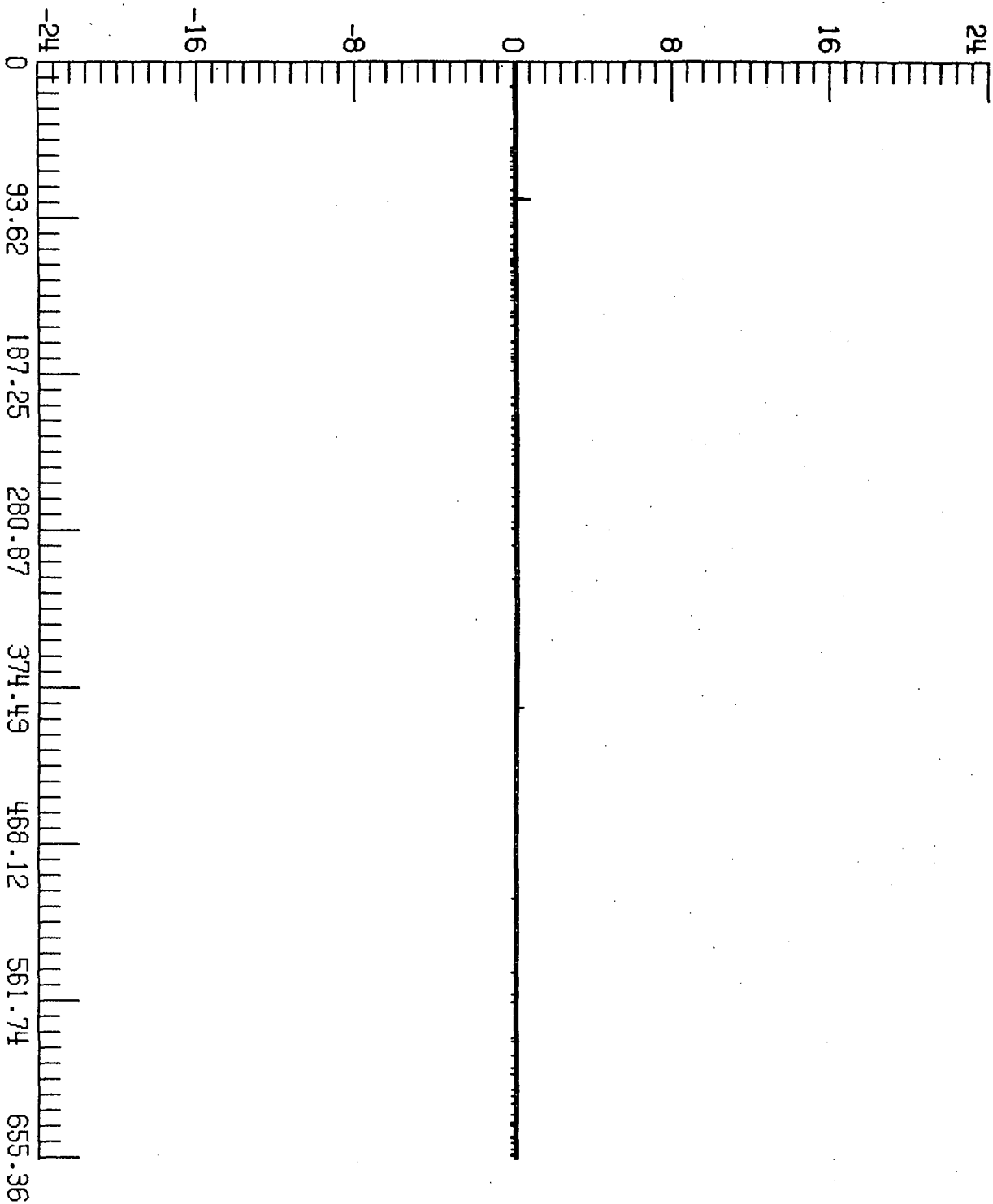
TEST NO. 83

$\dot{D}_t$  A/m<sup>2</sup>



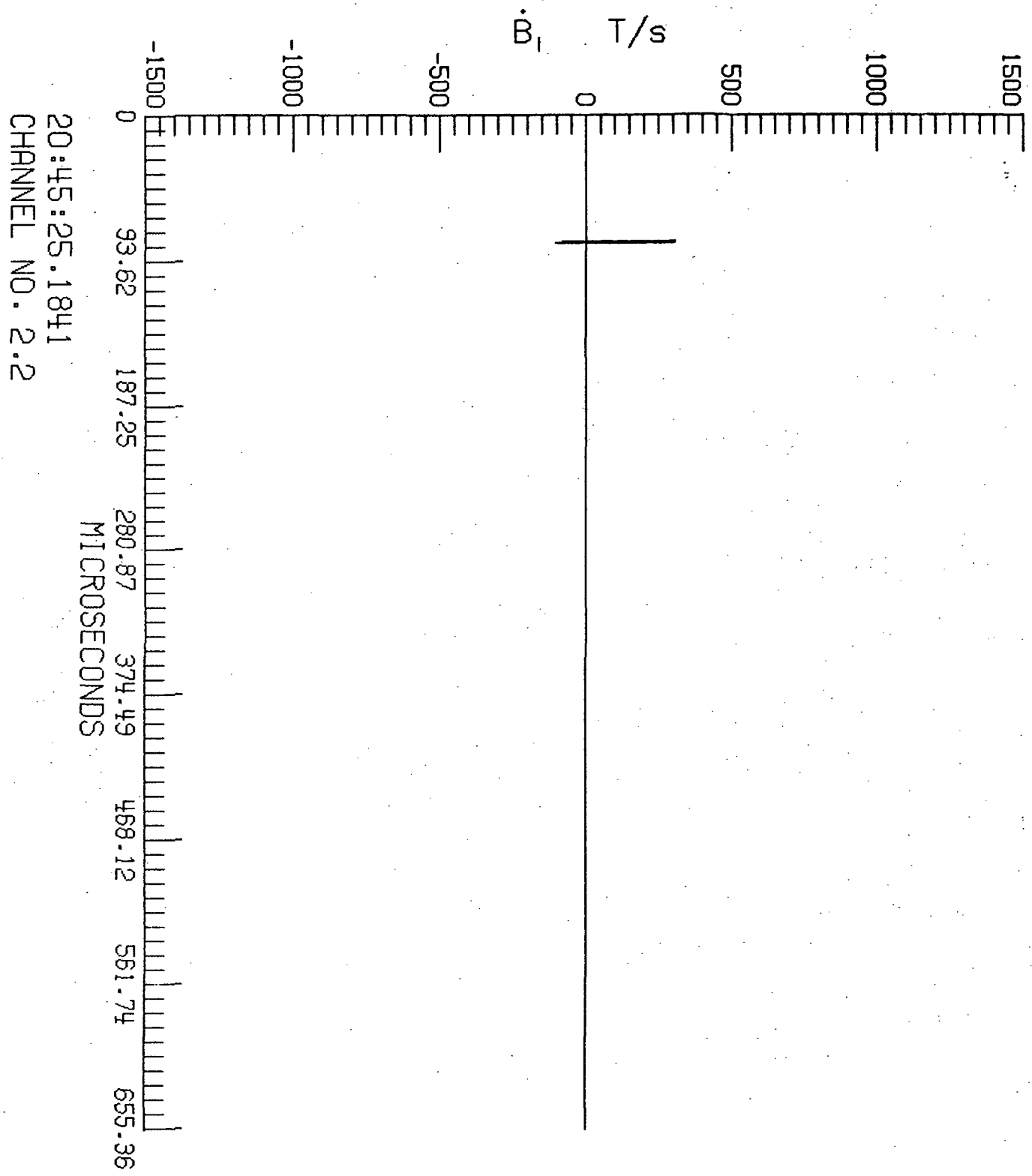
I A/s

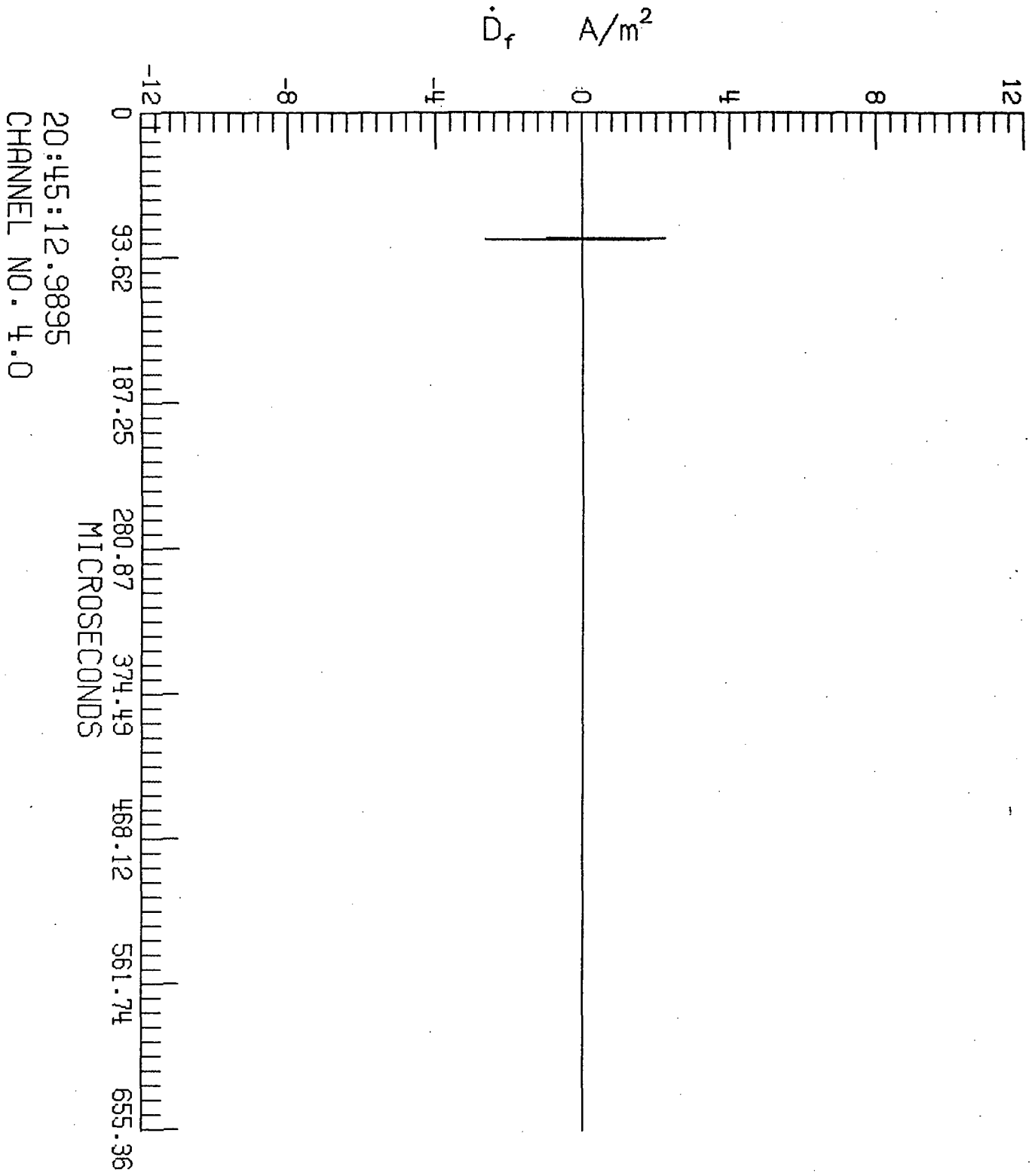
$\times 10^{10}$



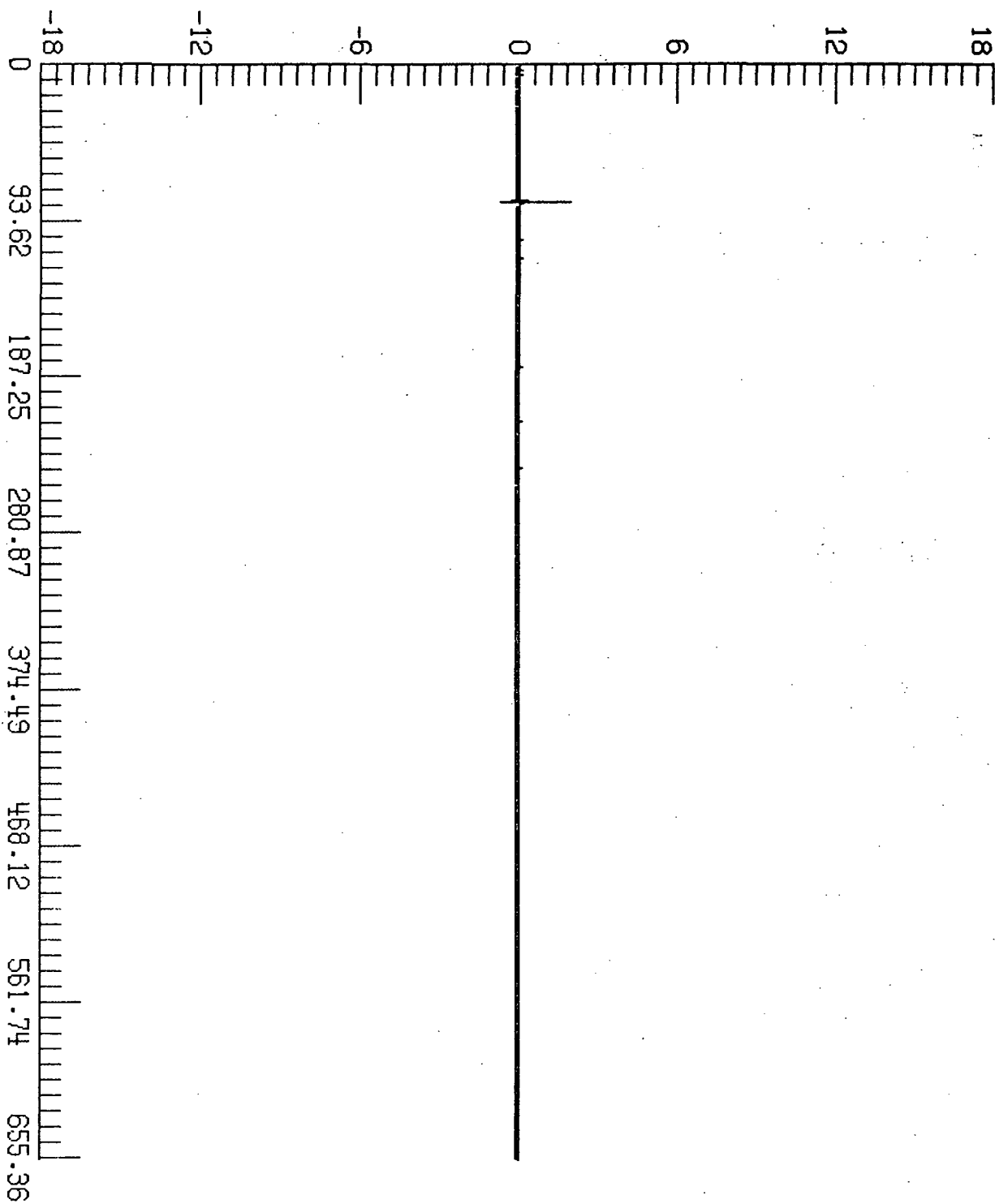
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CHANNEL NO. 2.1



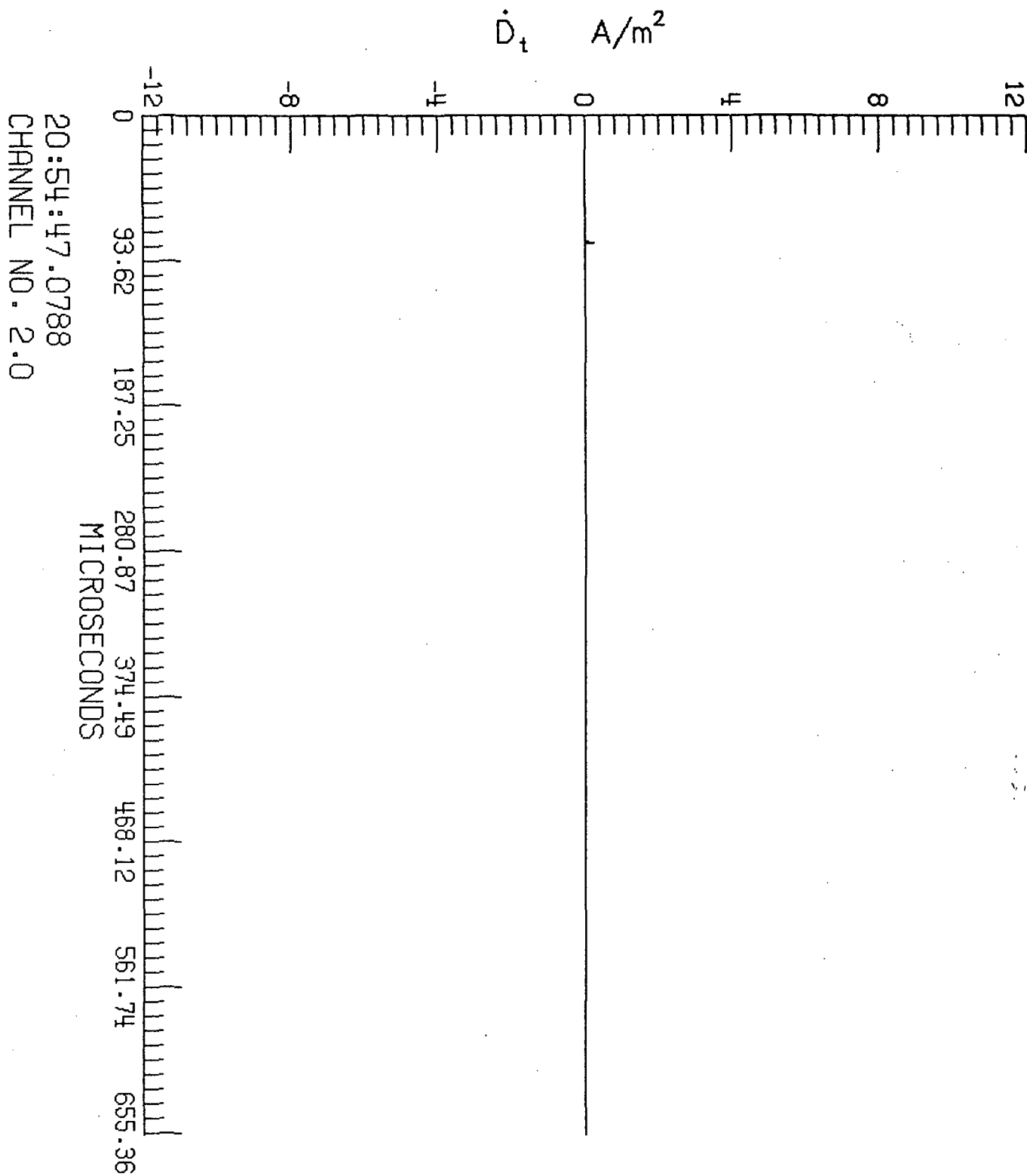


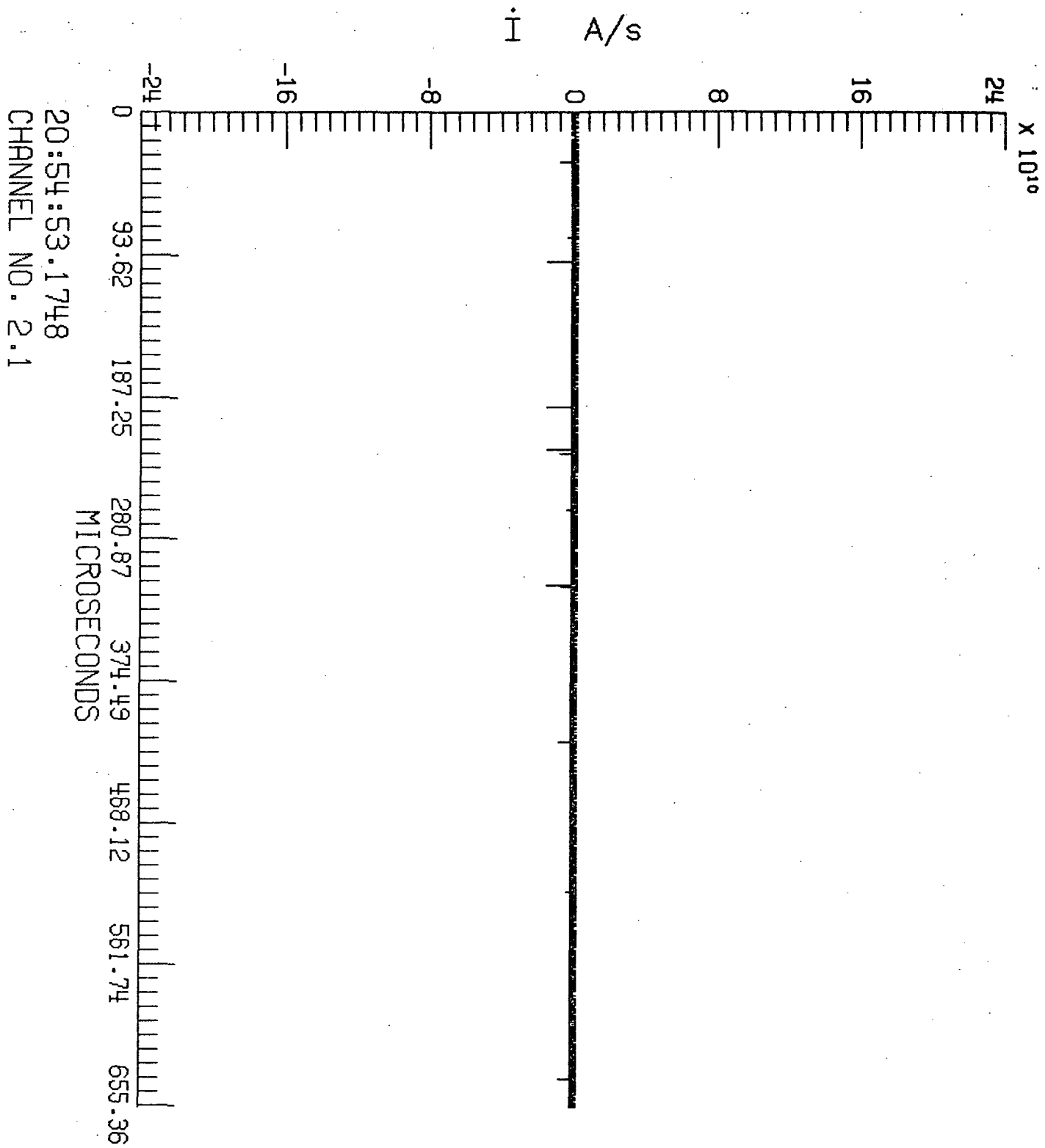
$\dot{D}_{wl}$   $A/m^2$



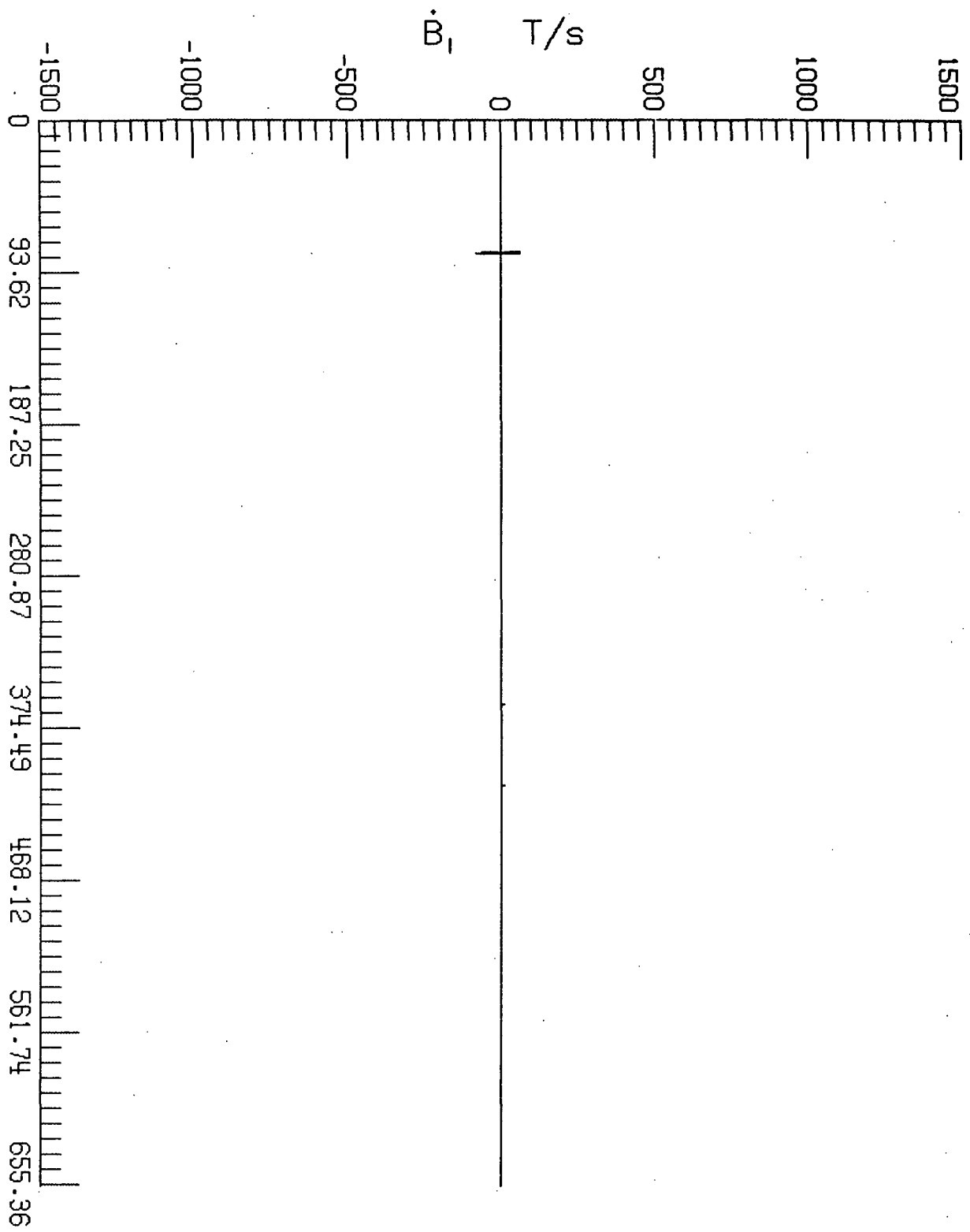
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CHANNEL NO. 4.2

MICROSECONDS



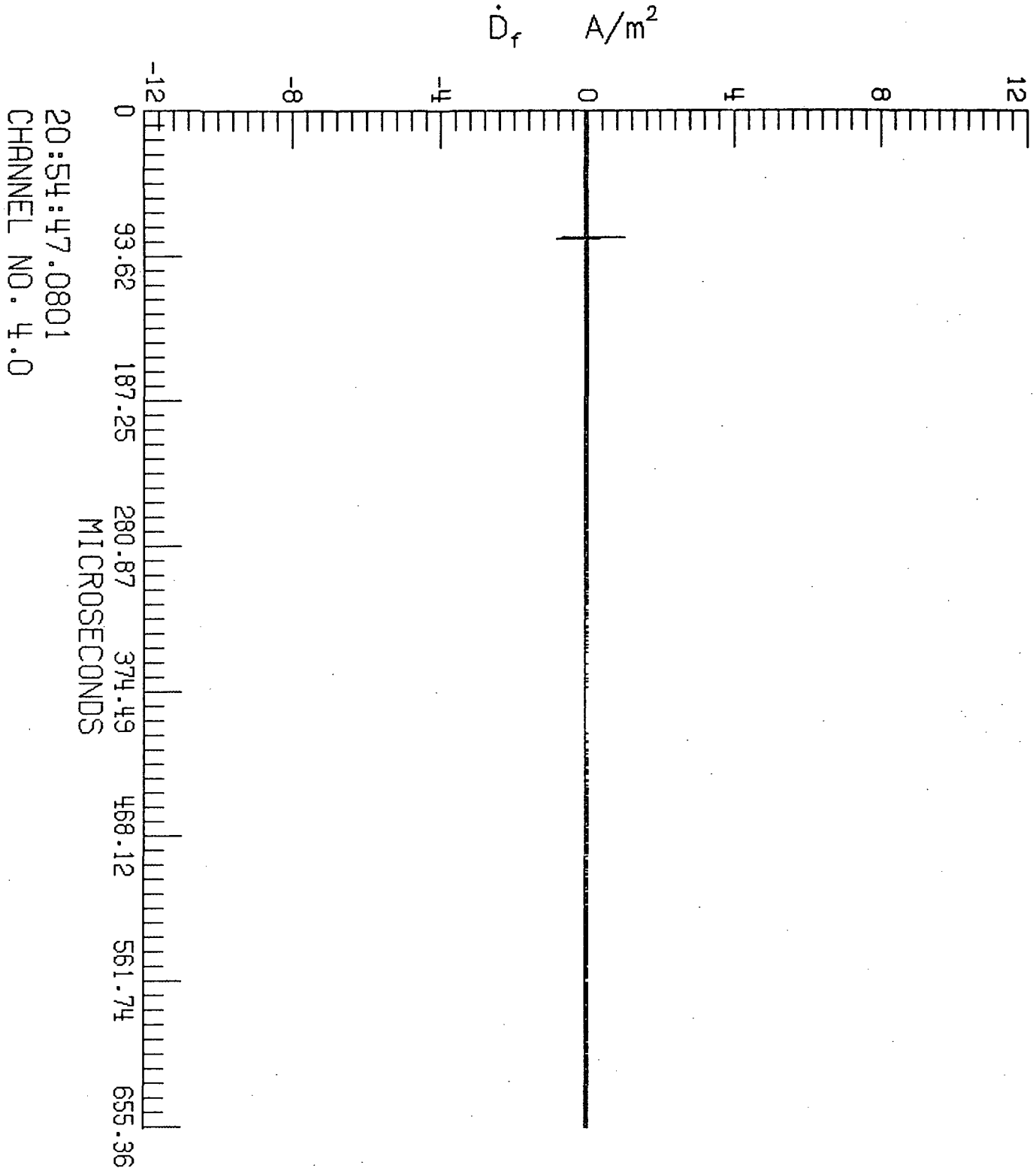


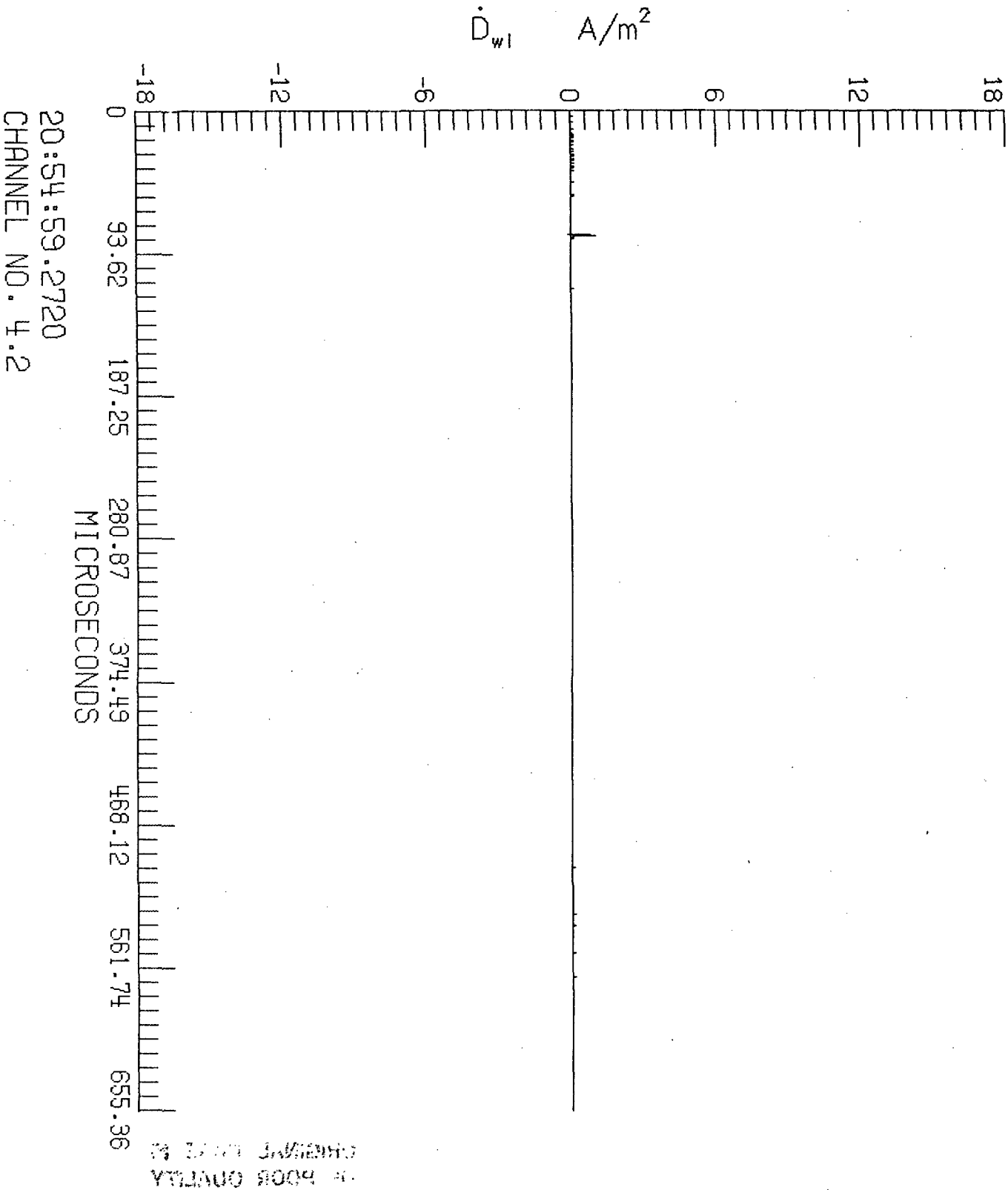




20:54:59.2709  
CHANNEL NO. 2.2

MICROSECONDS





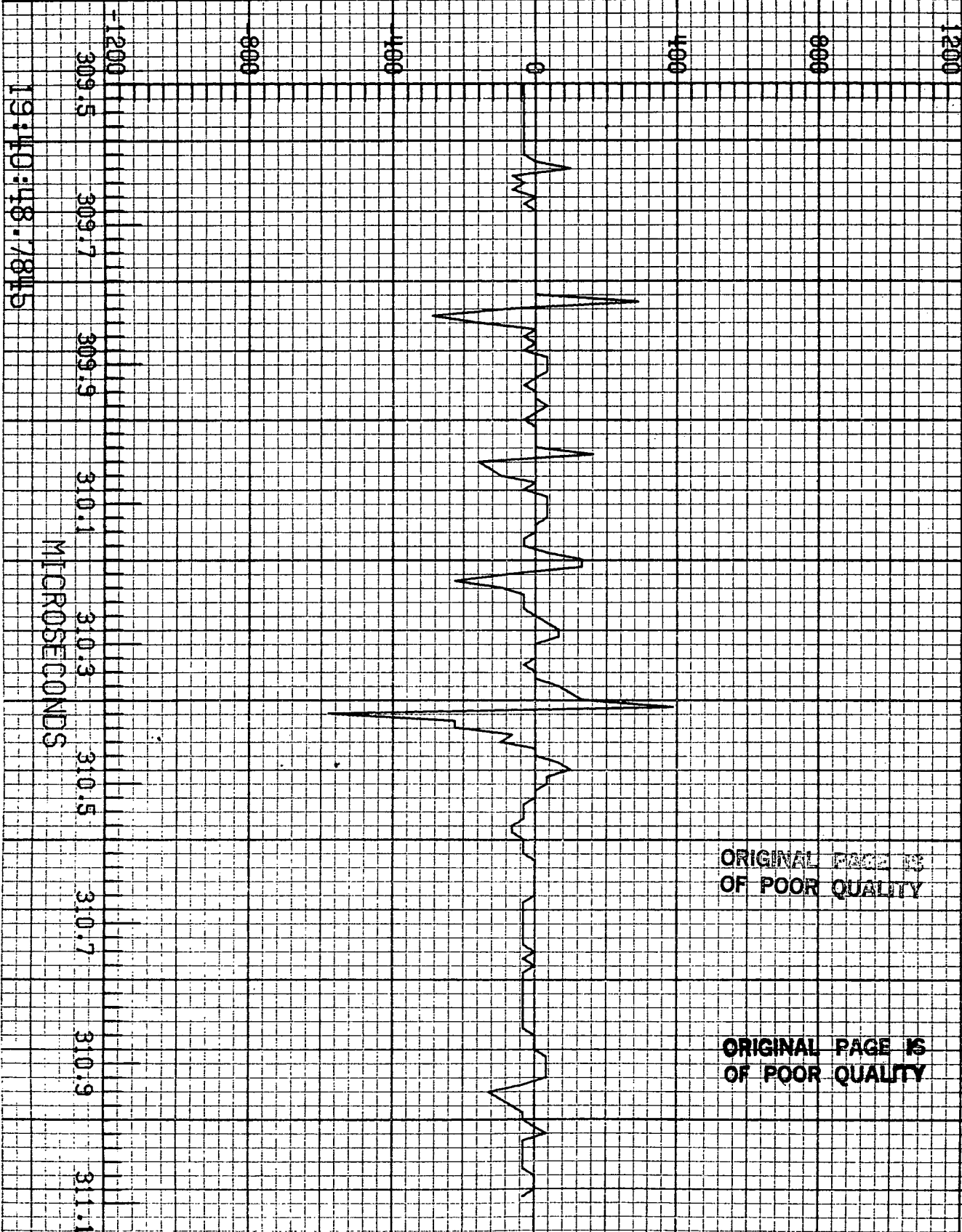
F106 LIGHTNING/TK-8/83-011/THOMAS

TEST NO. 83-01

RUN NO. 2

S-001

B DOT L T/S



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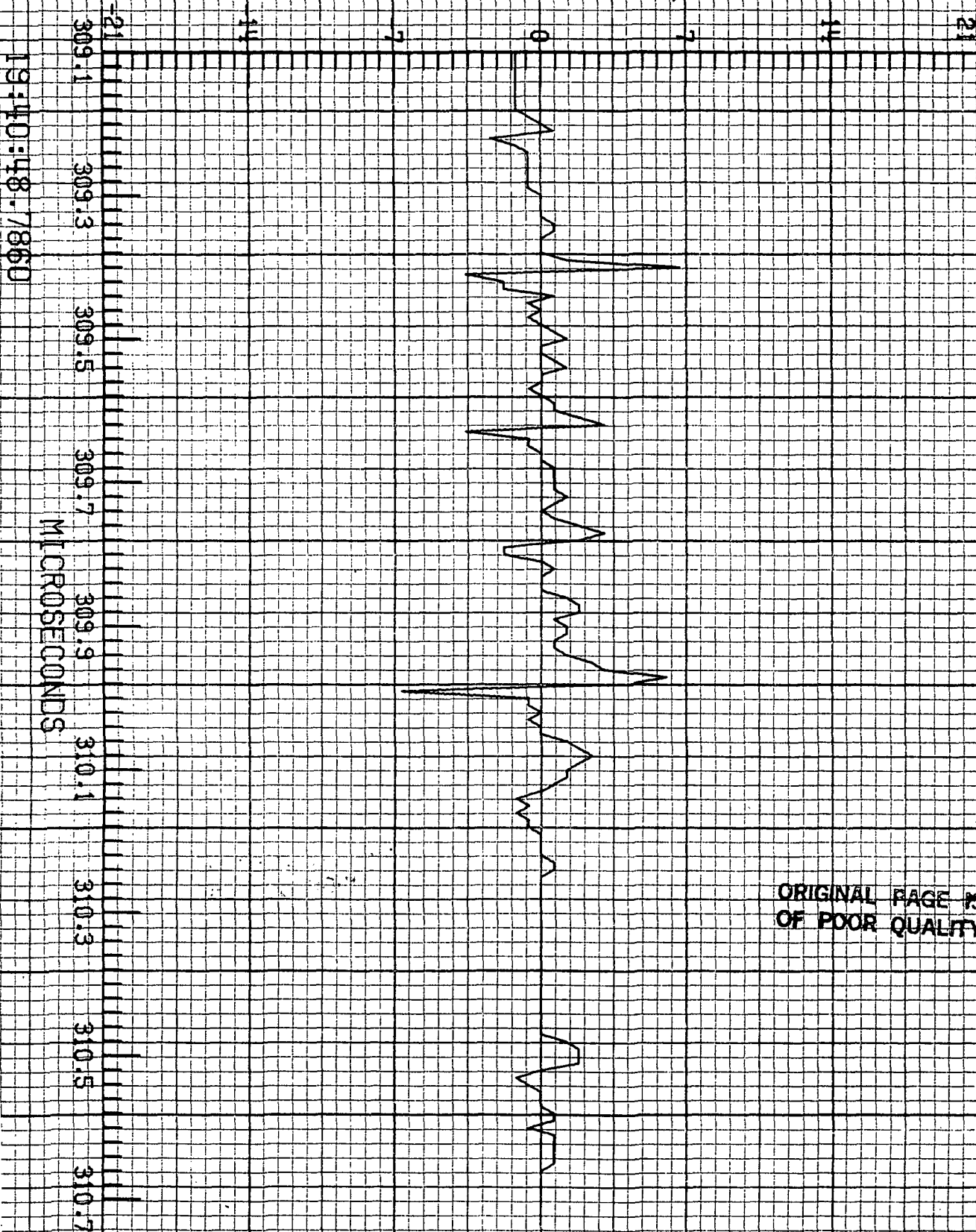
F106 LIGHTNING/TK10/83-011/THOMAS

TEST NO. 83-01

RUN NO. 2

S-001

D DOT FWD A/m<sup>2</sup>



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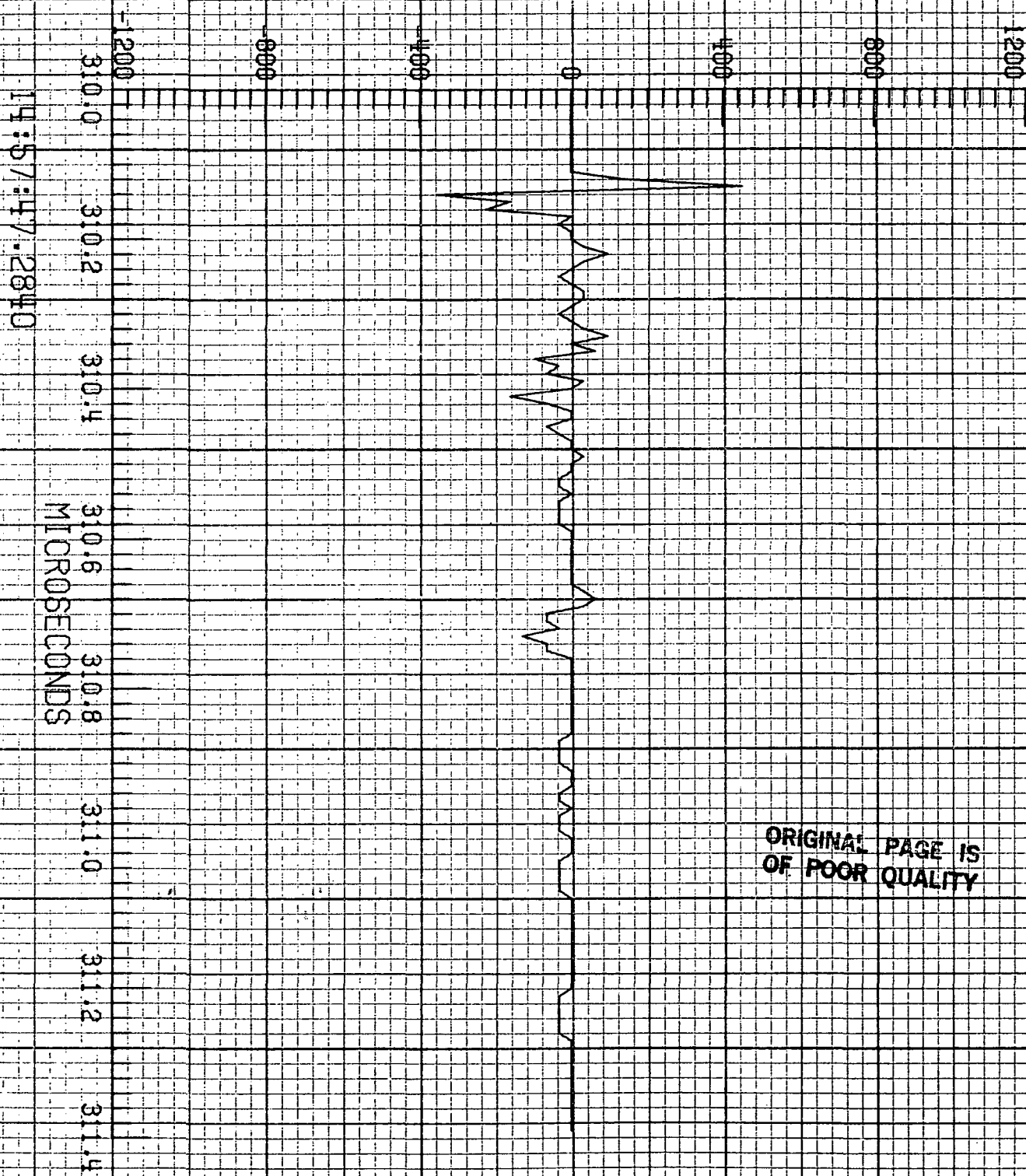
F106 LIGHTNING/83-013/M. THOMAS

TEST NO. 83-013

RUN NO. 1

S-001

B DOT 1 T/S



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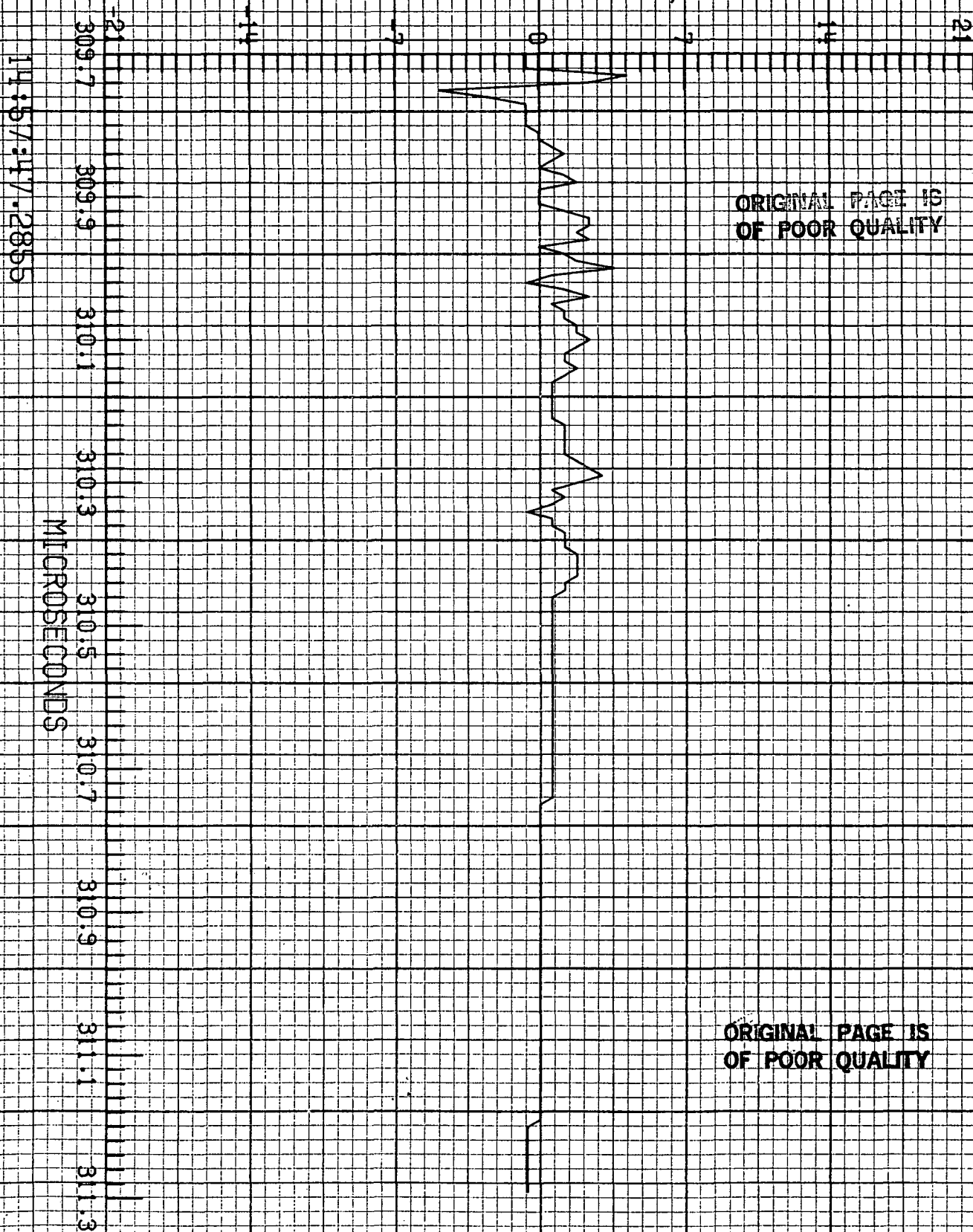
F106 LIGHTNING/83-013/M. THOMAS

TEST NO. 83-013

RUN NO. 1

S-001

D DOT FWD  $A/m^2$



F106 LIGHTNING/83-013/M. THOMAS

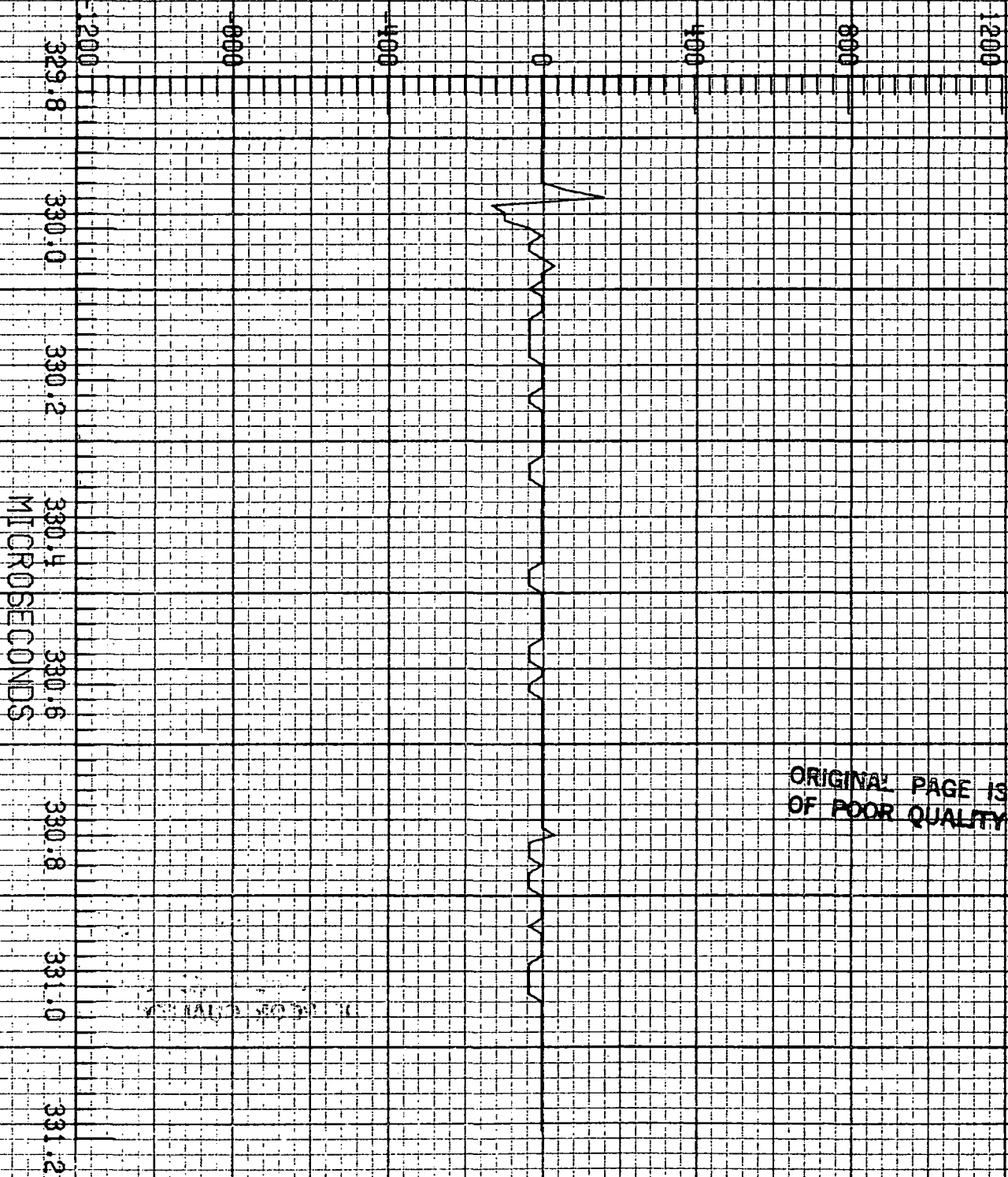
TEST NO. 83-013

RUN NO. 2

S-002

B DOT L T/S

15:07:41.0843



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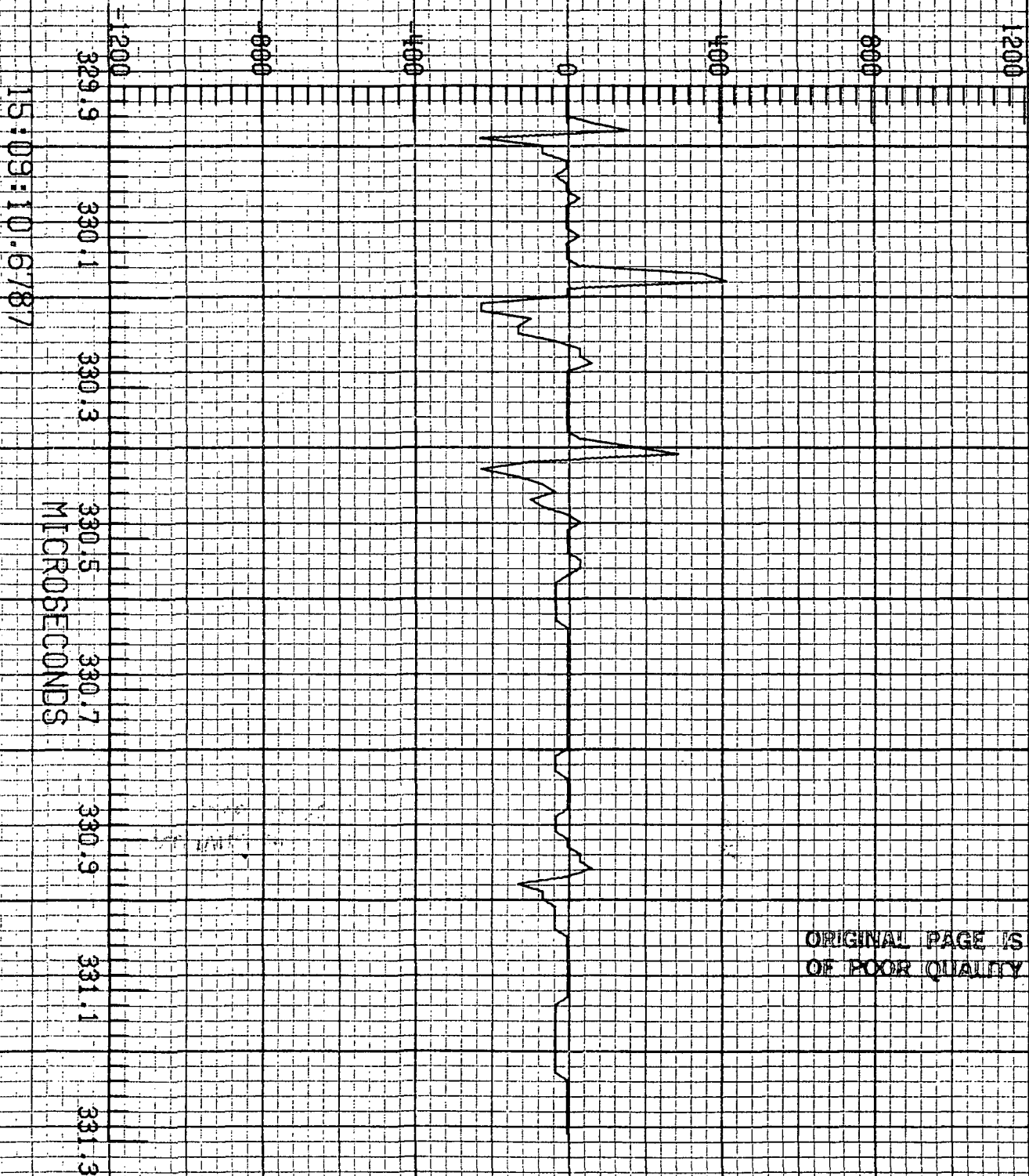
F106 LIGHTNING/83-018/M. THOMAS

TEST NO. 83-018

RUN NO. 3

S-003

B DOT II T/S



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F106 LIGHTNING/88-013/M. THOMAS

TEST NO. 83-013

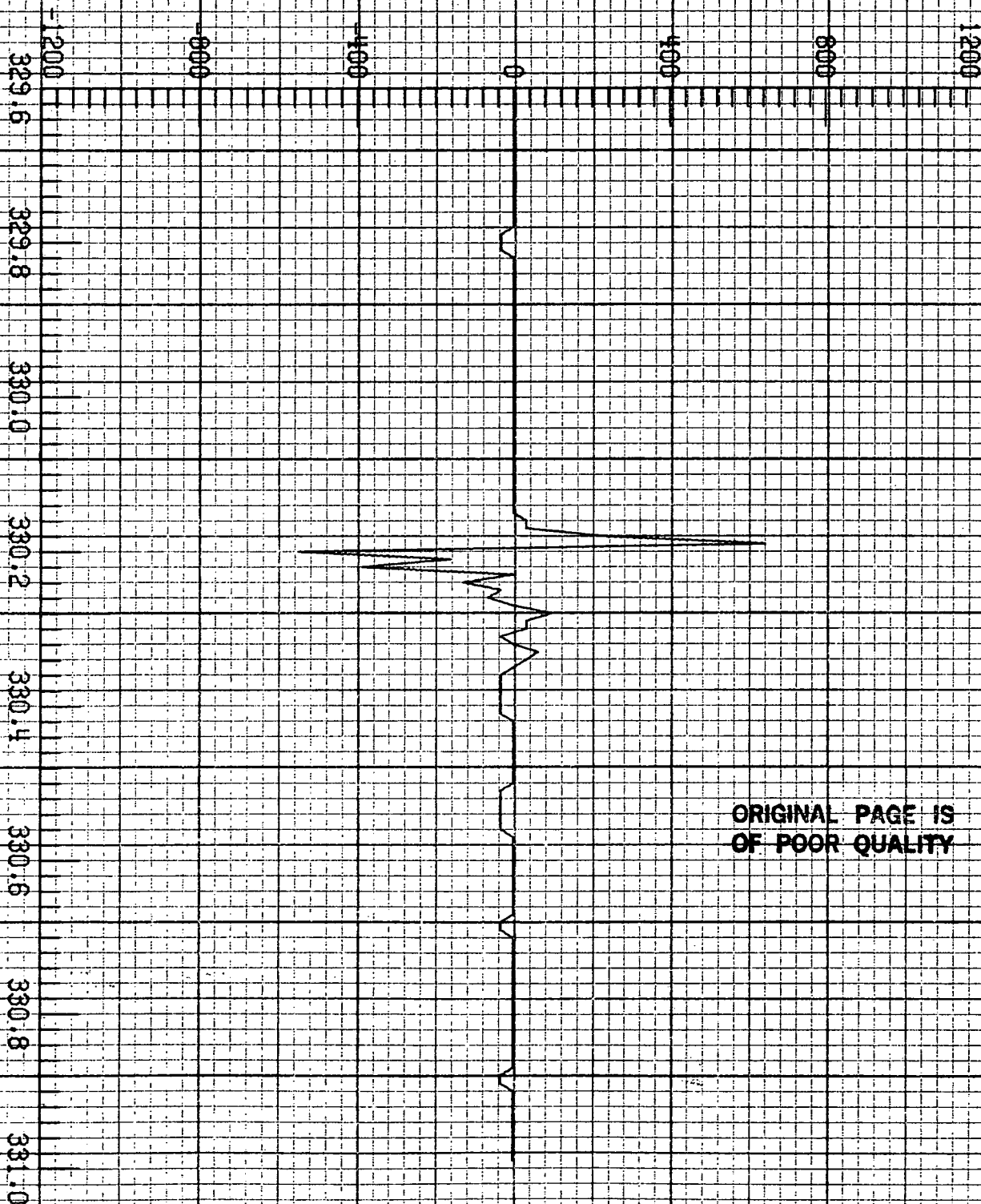
RUN NO. 4

S-004

B DOT I T/S

15:09:22.0012

MICROSECONDS



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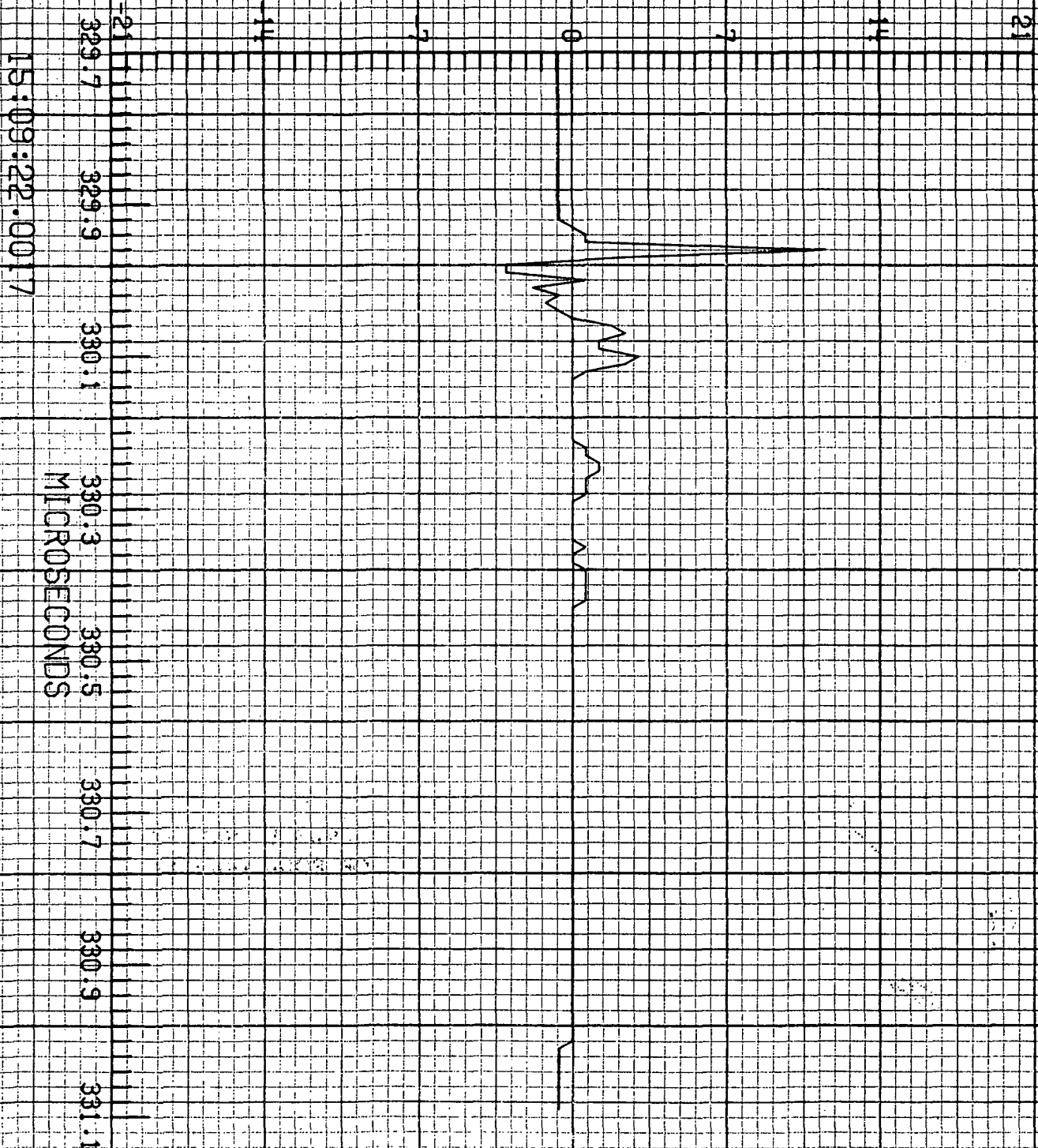
F106 LIGHTNING/83-013/M. THOMAS

TEST NO. 83-01

RUN NO. #

S-004

D DOT FWD  $A/m^2$

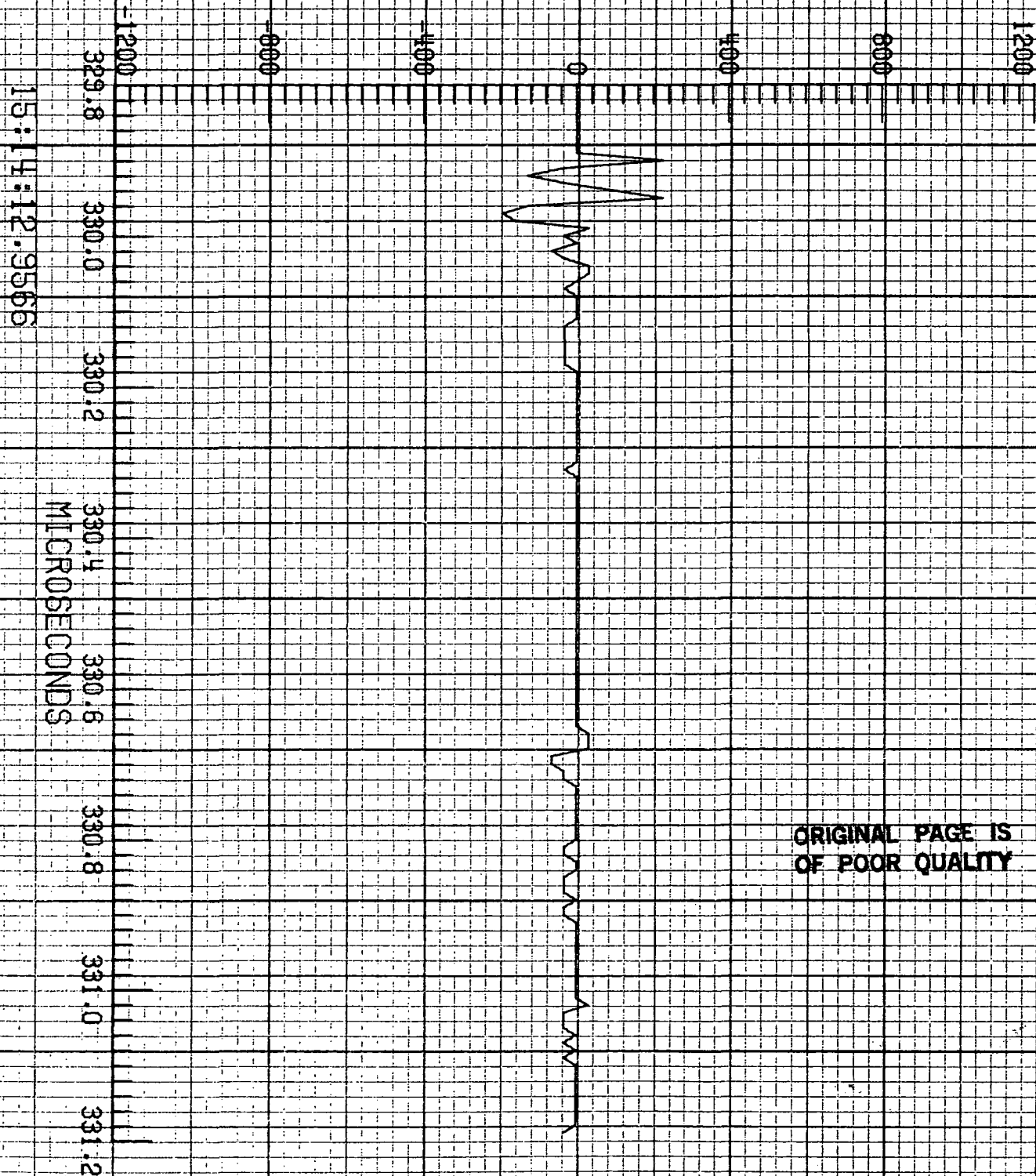


015

RUN NO. 5

S-005

B DOT 1 T/S



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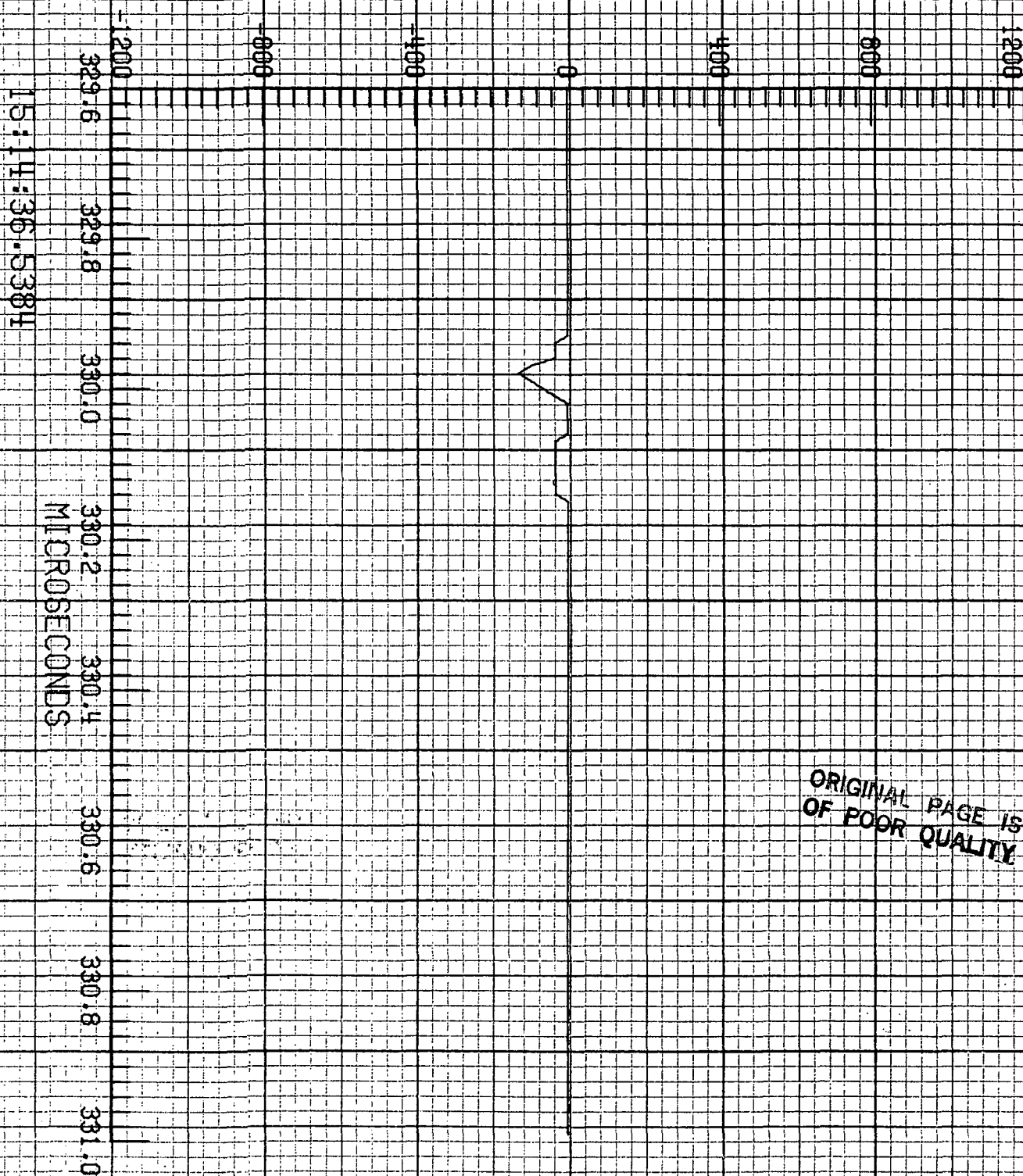
F106 LIGHTNING/83-013/M. THOMAS

TEST NO. 83-013

RUN NO. 6

S-006

B DOT L T/S



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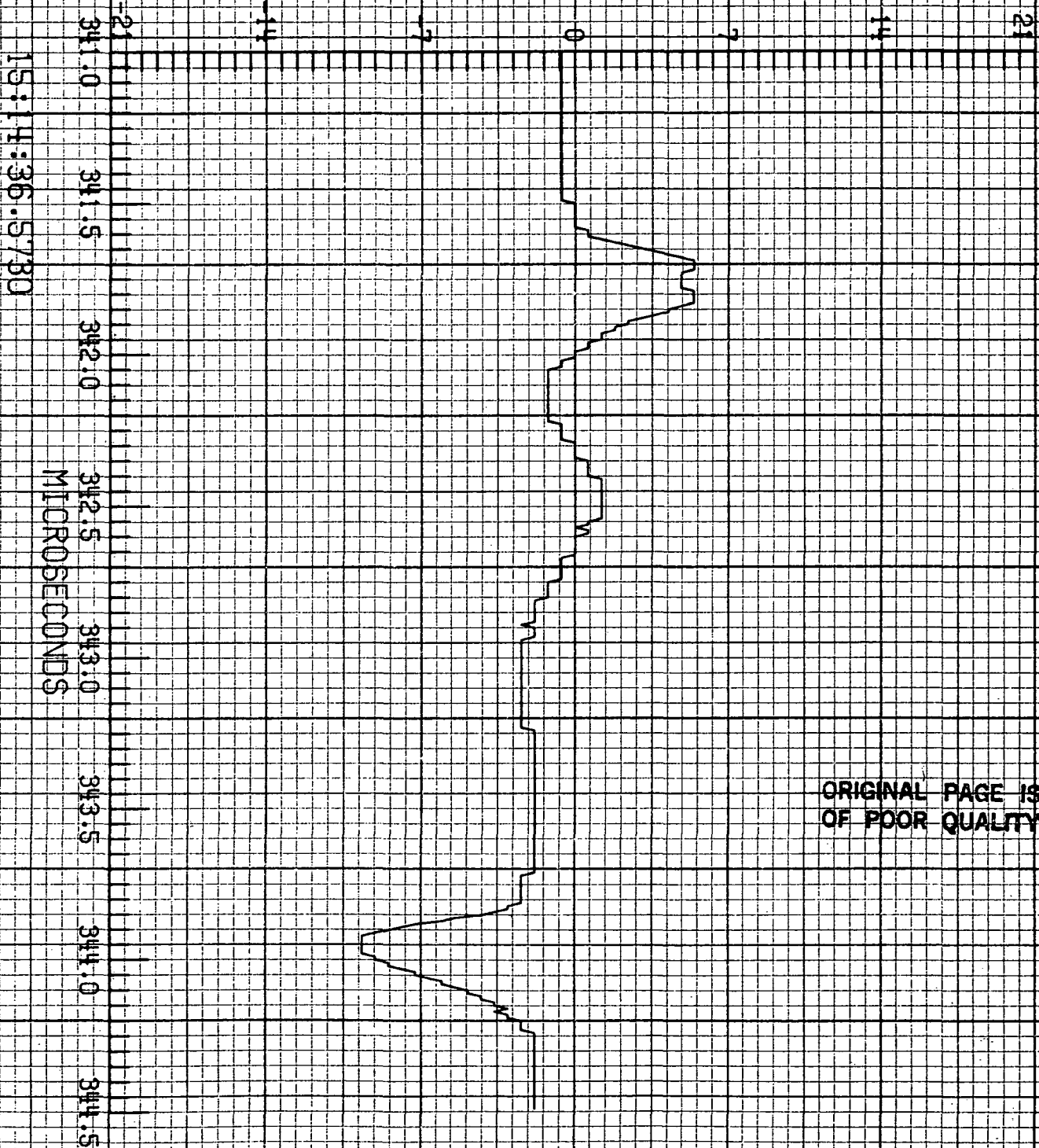
F106 LIGHTNING/83-013/M. THOMAS

TEST NO. 83-01

RUN NO. 6

S-006

D DOT FWD  $A/m^2$



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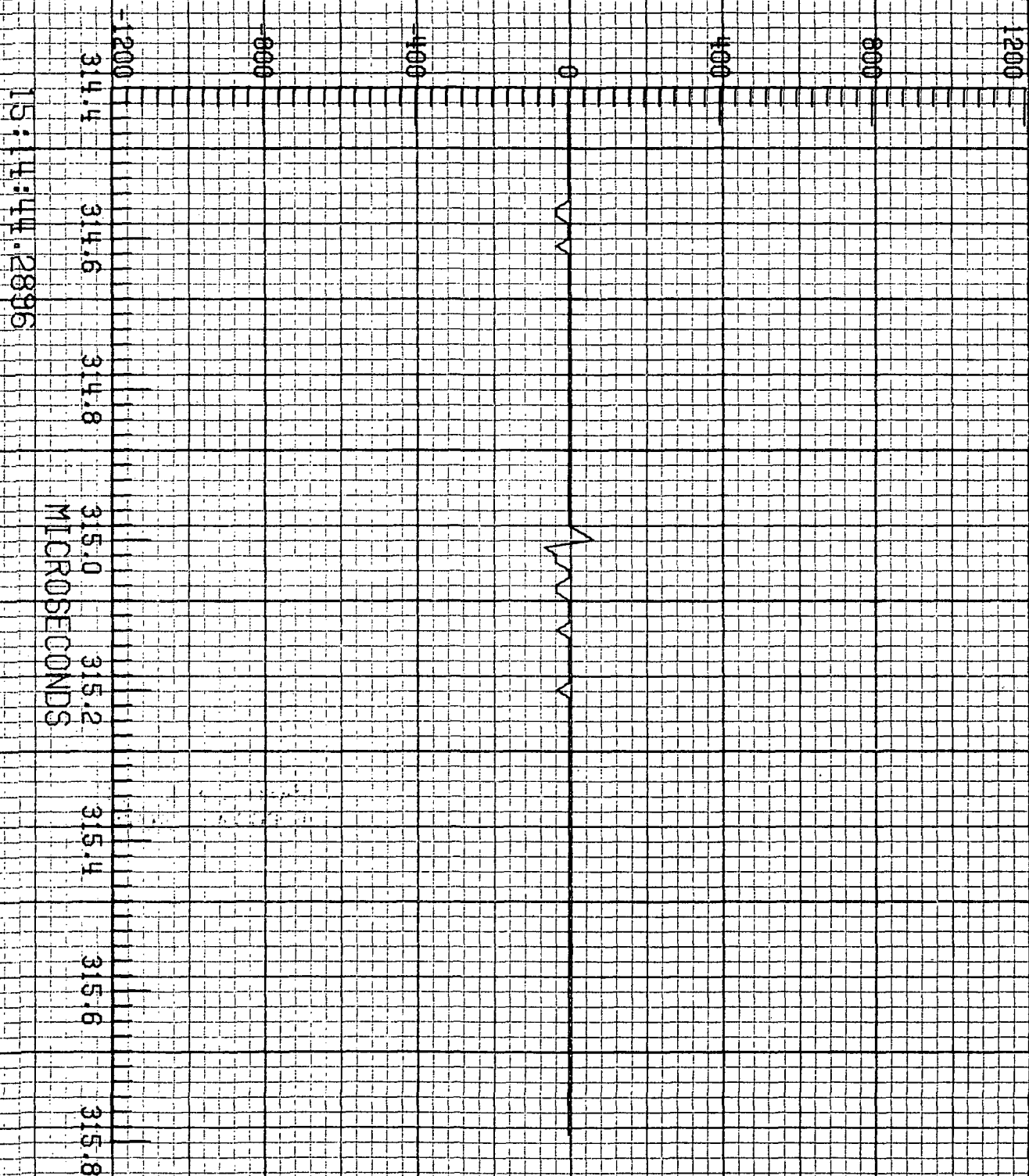
F106 LIGHTNING/83-013/M. THOMAS

TEST NO. 83-013

RUN NO. 7

S-007

B DOT L T/S



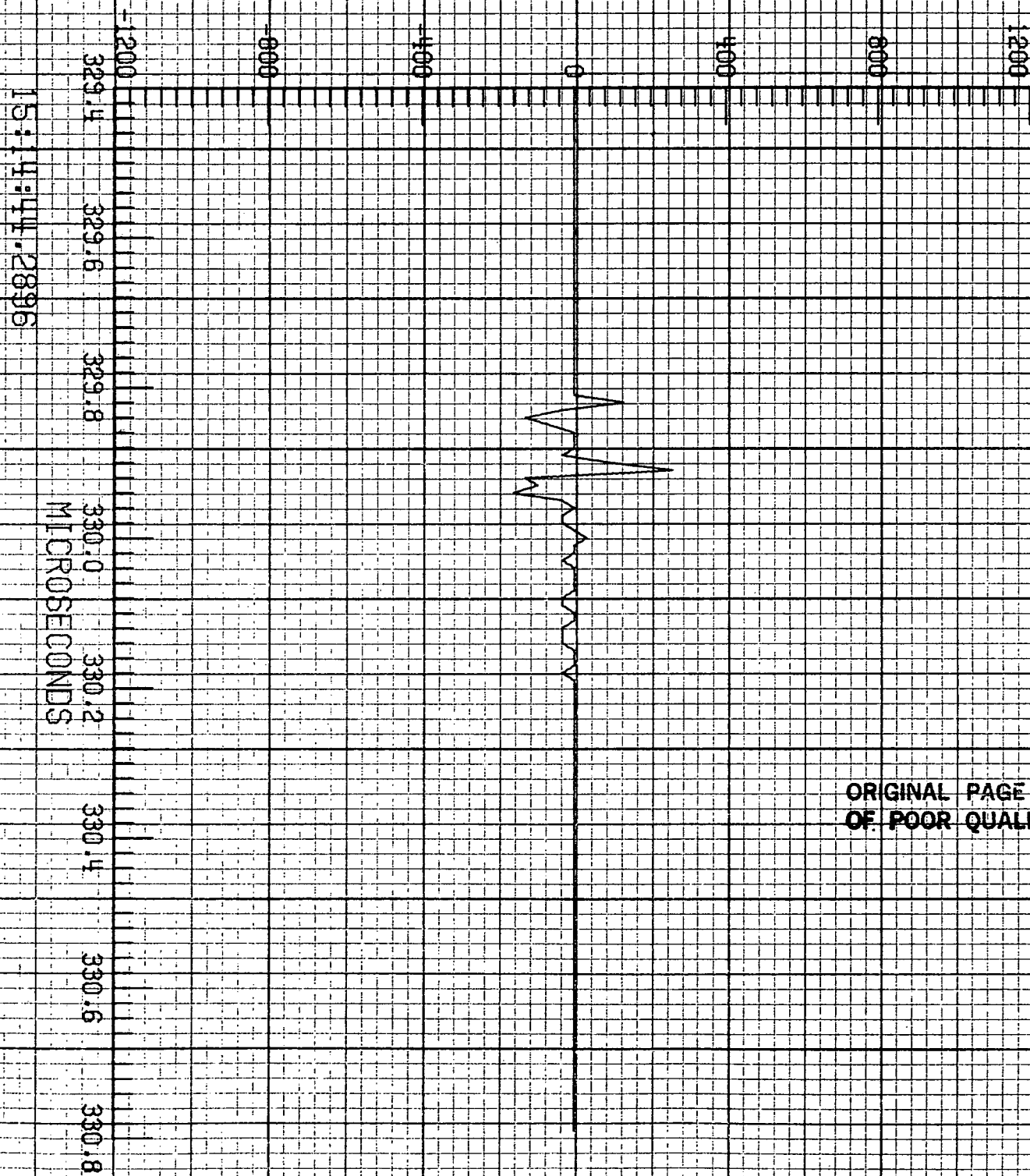
F106 LIGHTNING/83-013/M. THOMAS

TEST NO. 83-013

RUN NO. 7

S-007

B DOT L T/S



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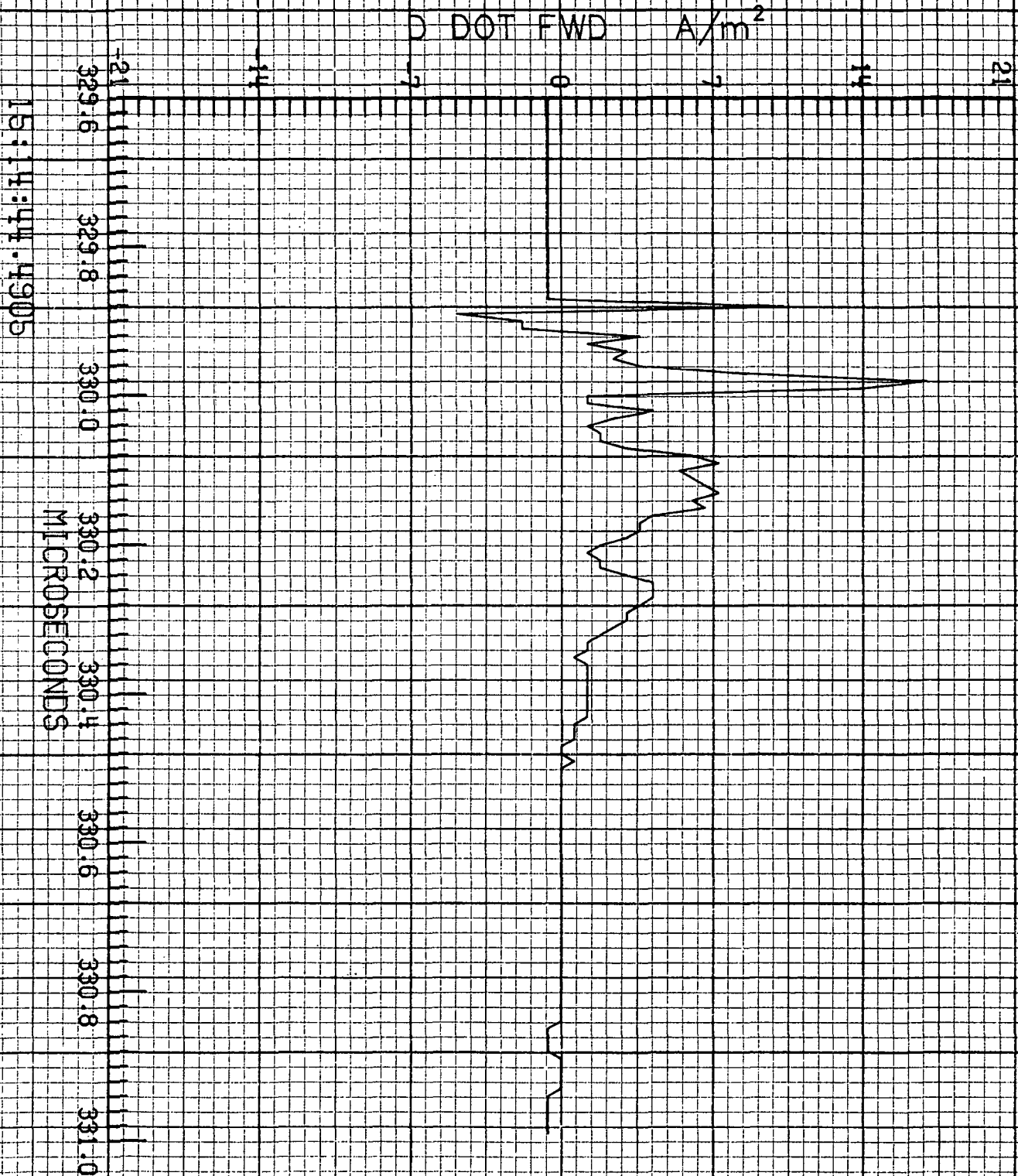
F106 LIGHTNING/83-013/M. THOMAS

TEST NO. 83-013

RUN NO. 7

S-007

D DOT FWD  $A/m^2$



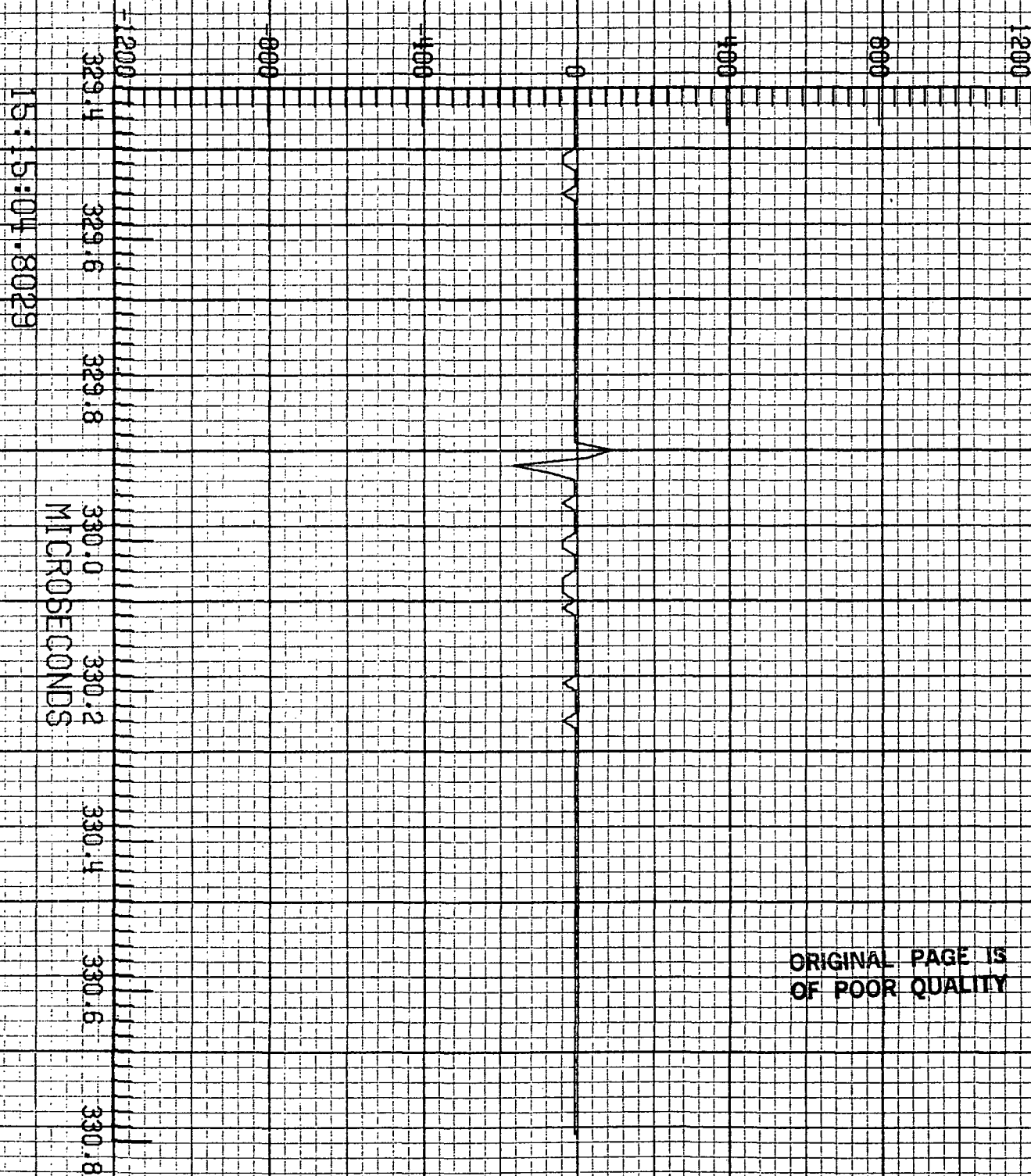
F106 LIGHTNING/83-013/M.THOMAS

TEST NO. 83-013

RUN NO. 8

N-001

B DOT L T/S



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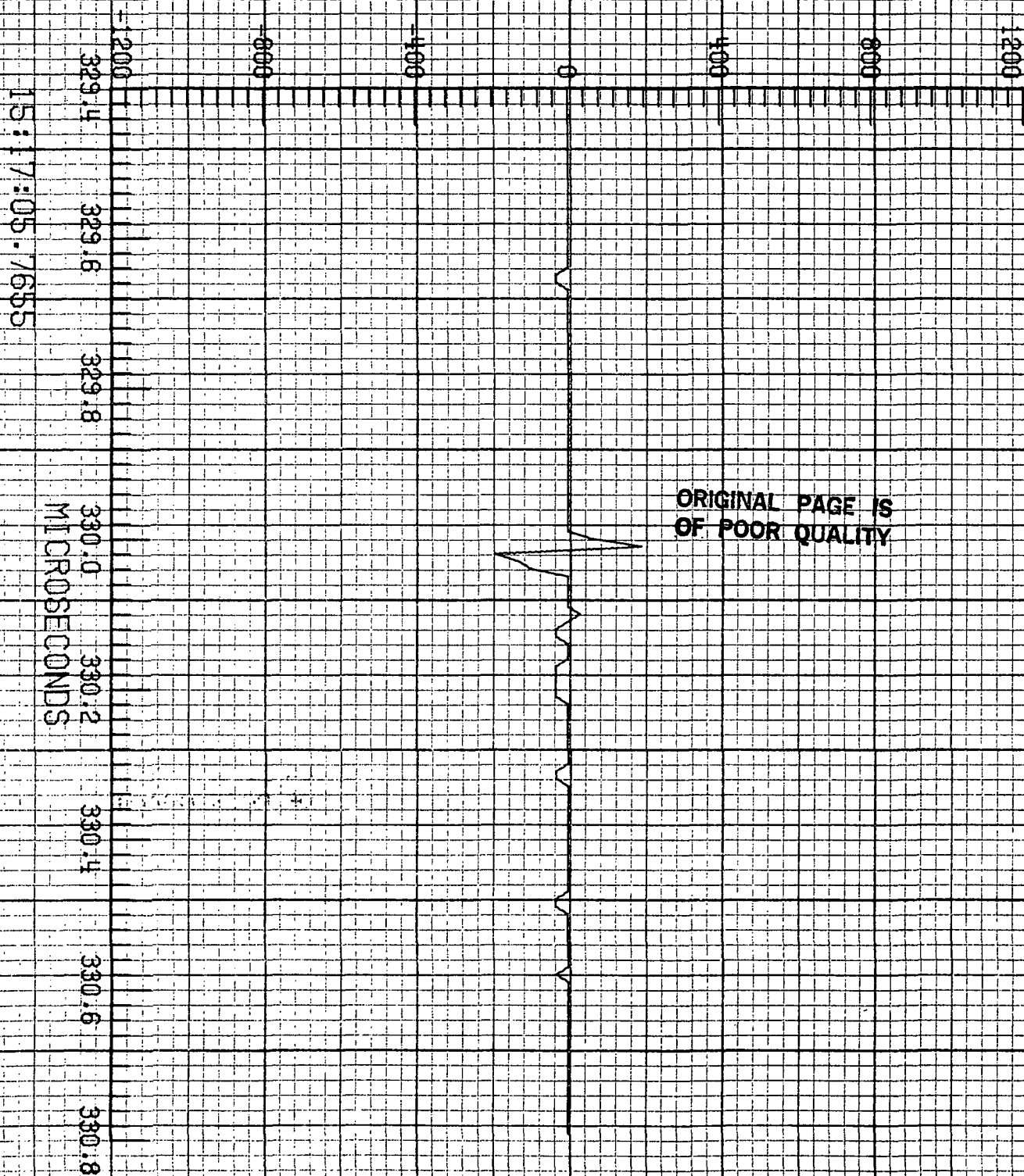
F106 LIGHTNING/83-013/M. THOMAS

TEST NO. 83-013

RUN NO. 8

S-003

B DOT L T/S



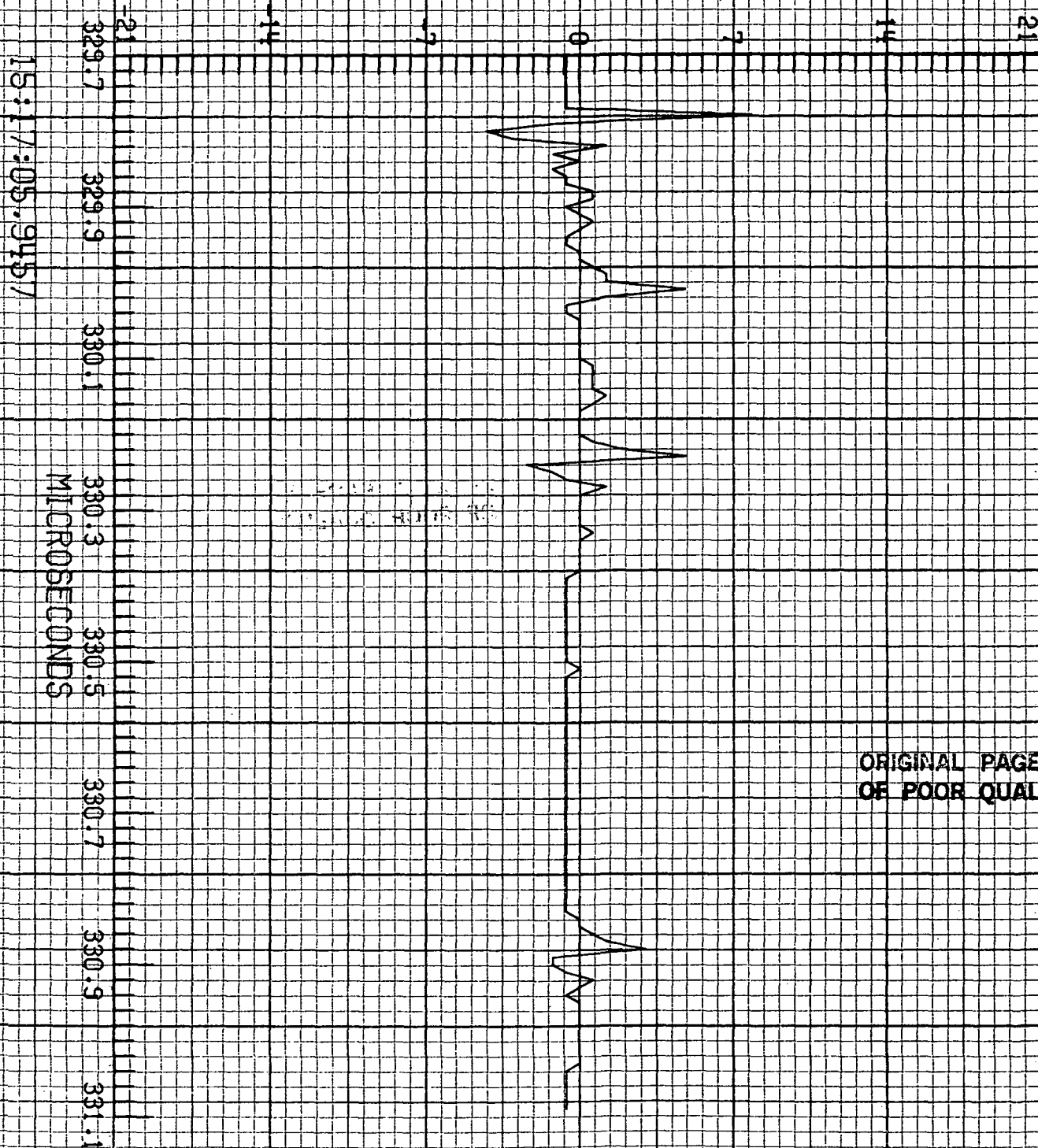
F106 LIGHTNING/88-013/M. THOMAS

TEST NO. 83-013

RUN NO. 0

S-009

D DOT FWD  $A/m^2$



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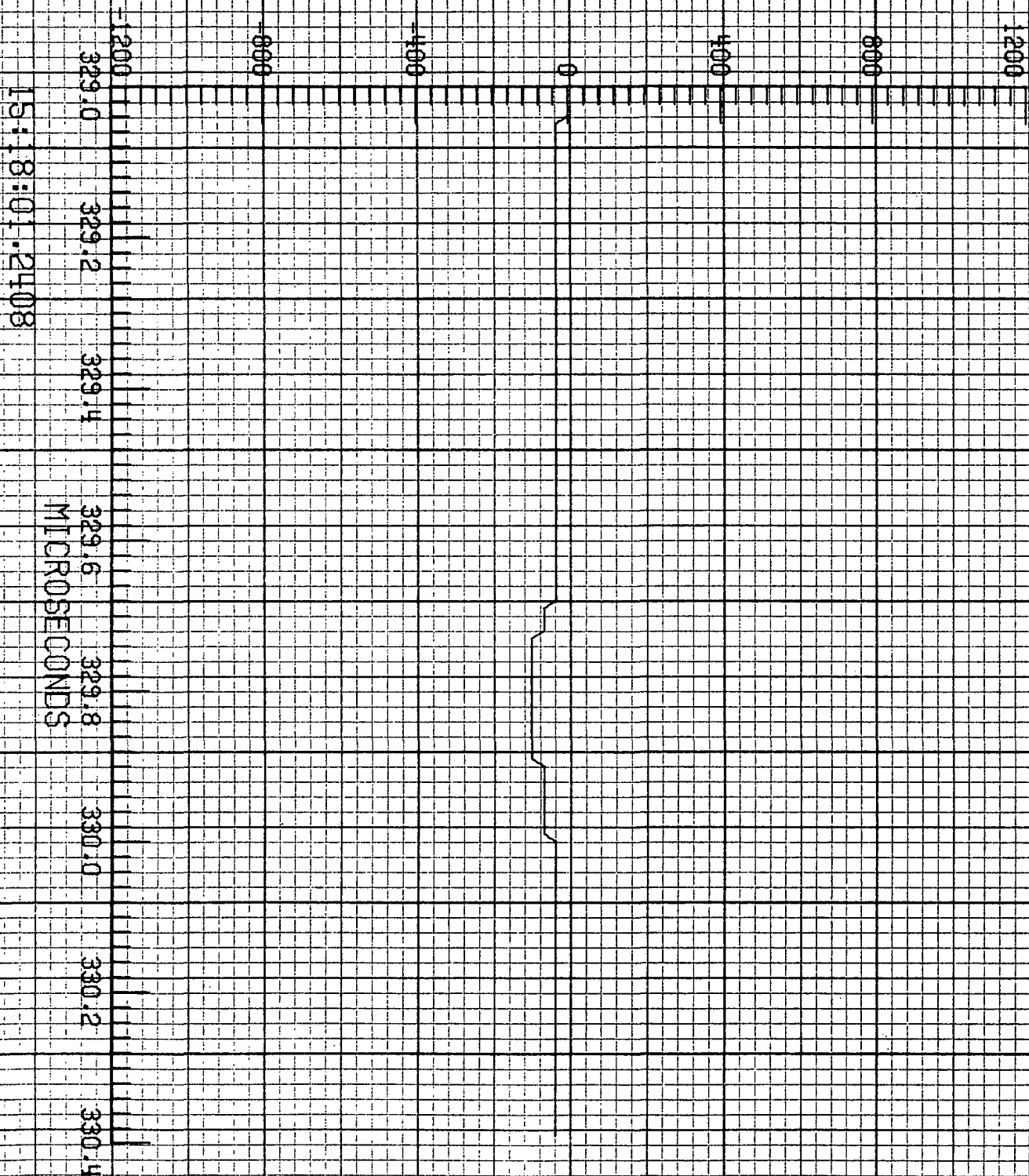
F106 LIGHTNING/83-013/M. THOMAS

TEST NO. 83-013

RUN NO. 10

S-010

B DOT L T/S





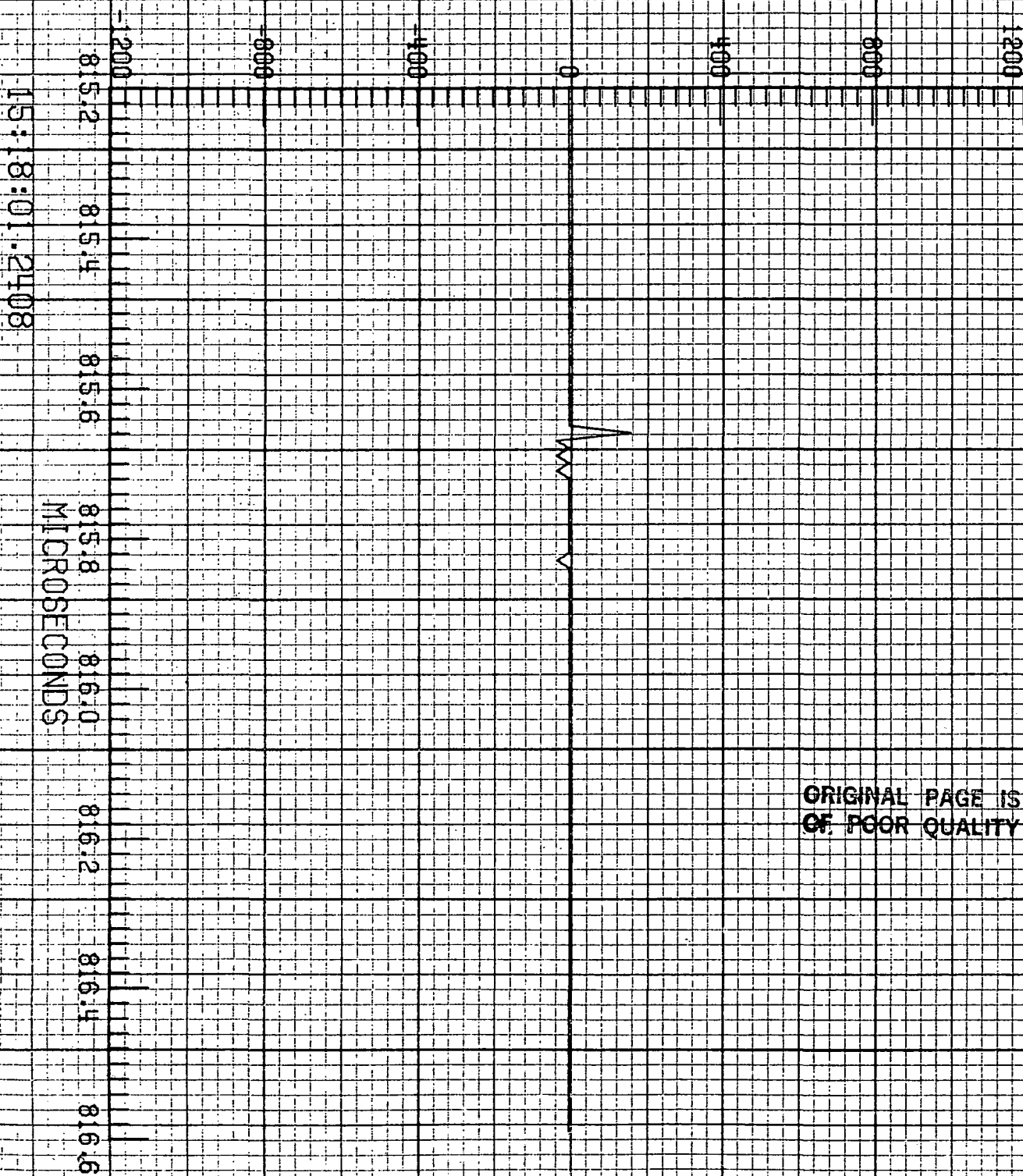
F106 LIGHTNING/83-013/M. THOMAS

TEST NO. 83-013

RUN NO. 10

S-010

B DOT L T/S



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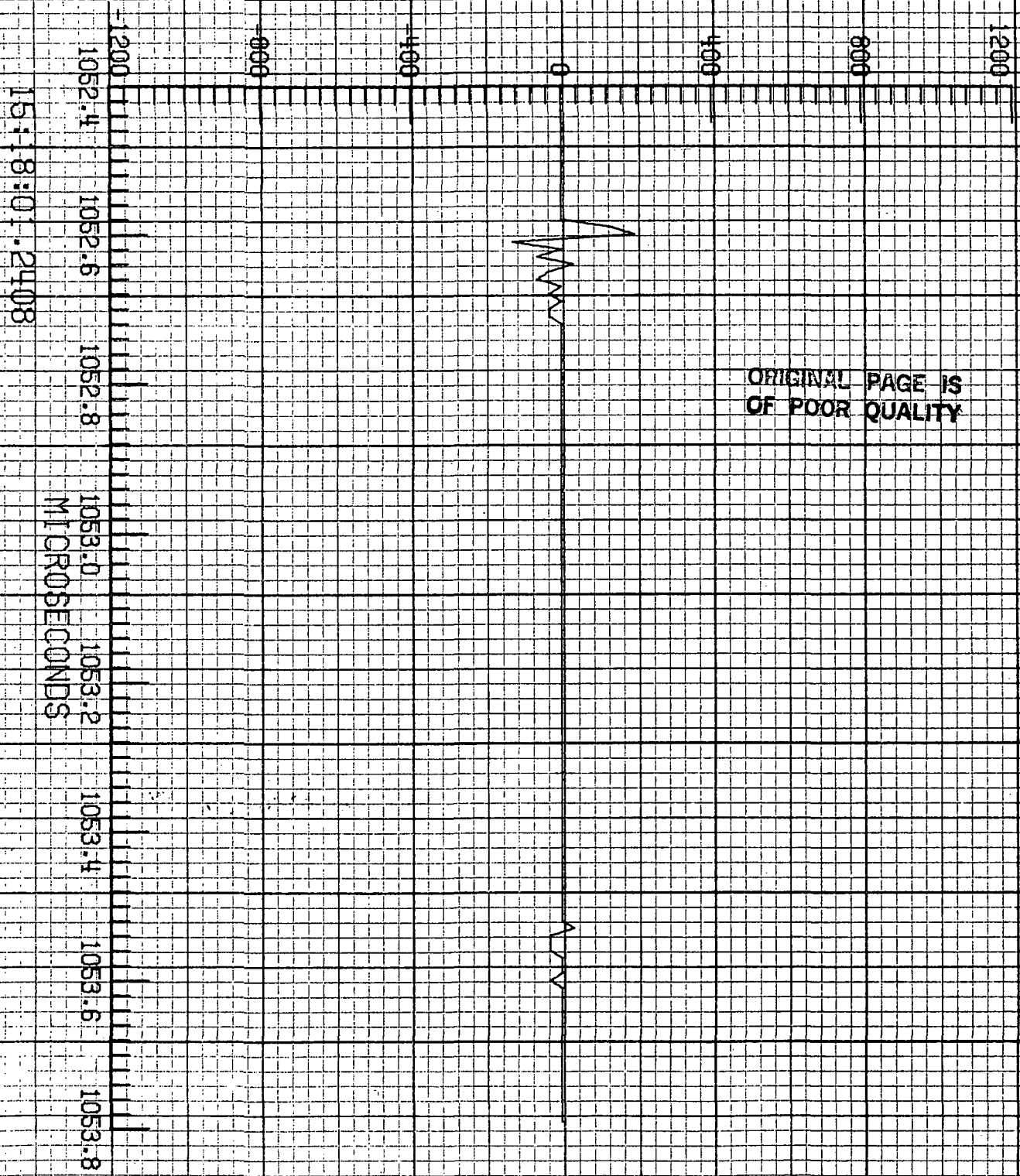
F106 LIGHTNING/83-013/M. THOMAS

TEST NO. 83-013

RUN NO. 10

S-010

B DOT L T/S



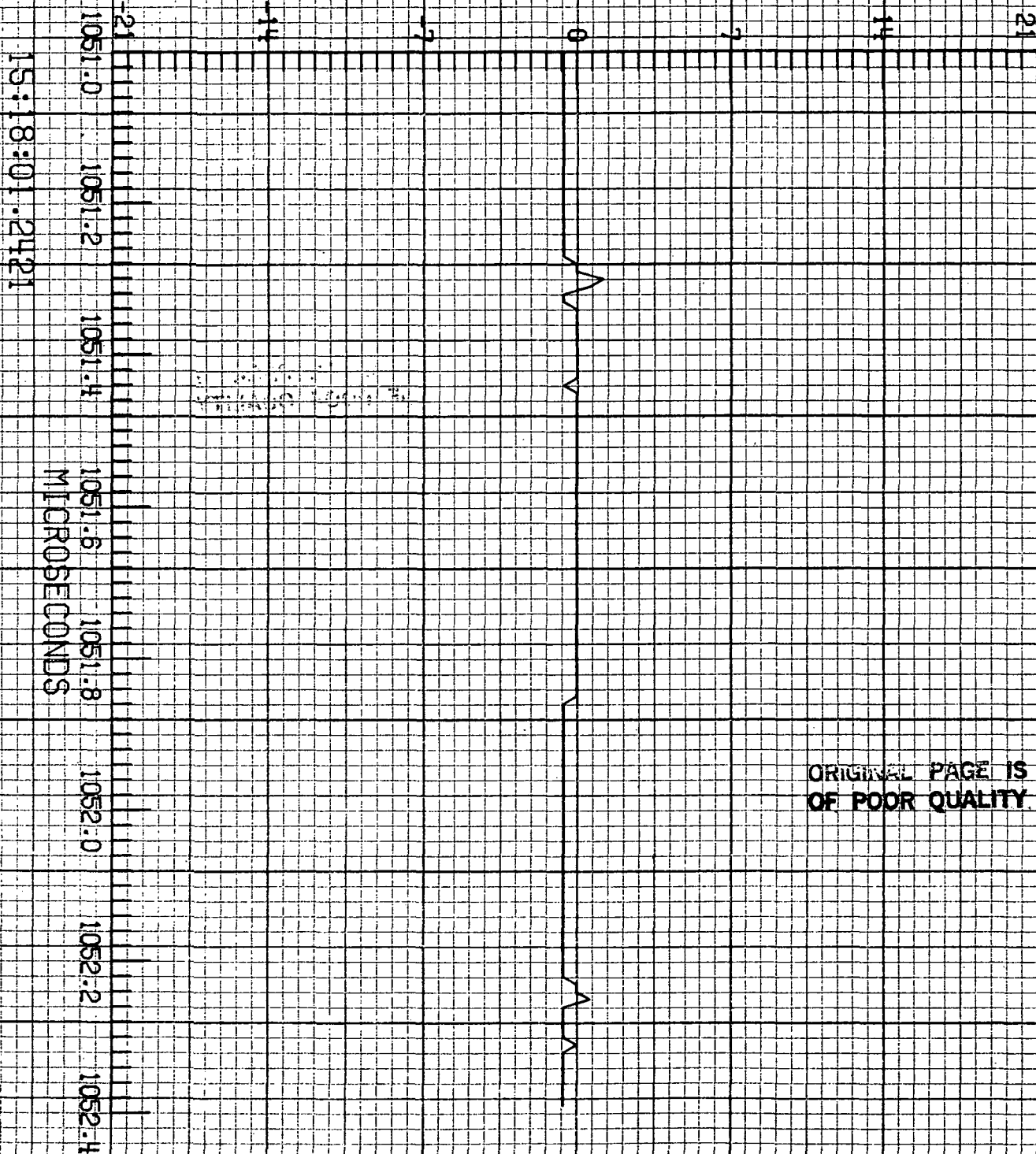
F106 LIGHTNING/83-013/M. THOMAS

TEST NO. 83-01

RUN NO. 10

S-010

D DOT FWD  $A/m^2$





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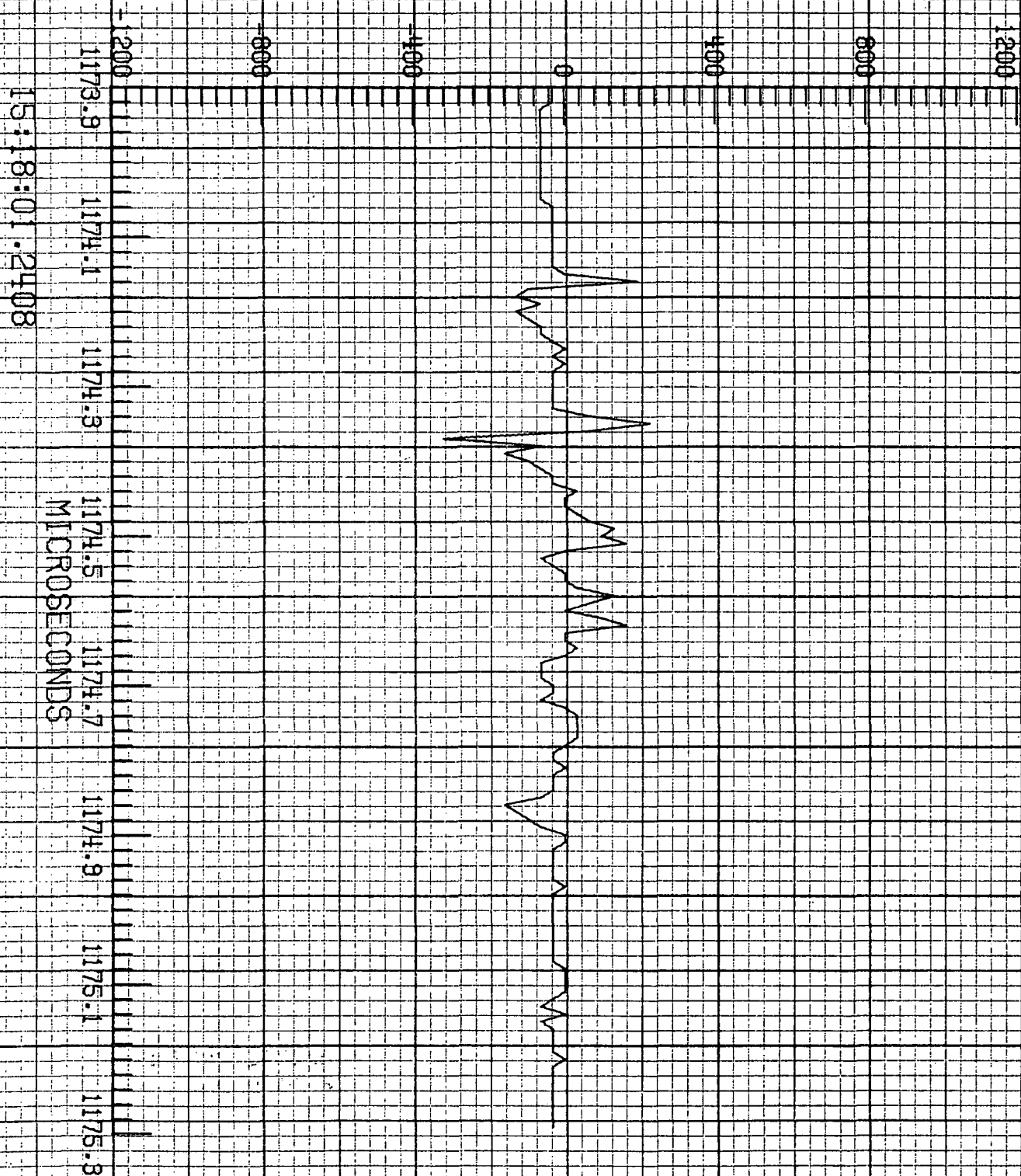
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TEST NO. 83-013

RUN NO. 10

S-010

B DOT L T/S



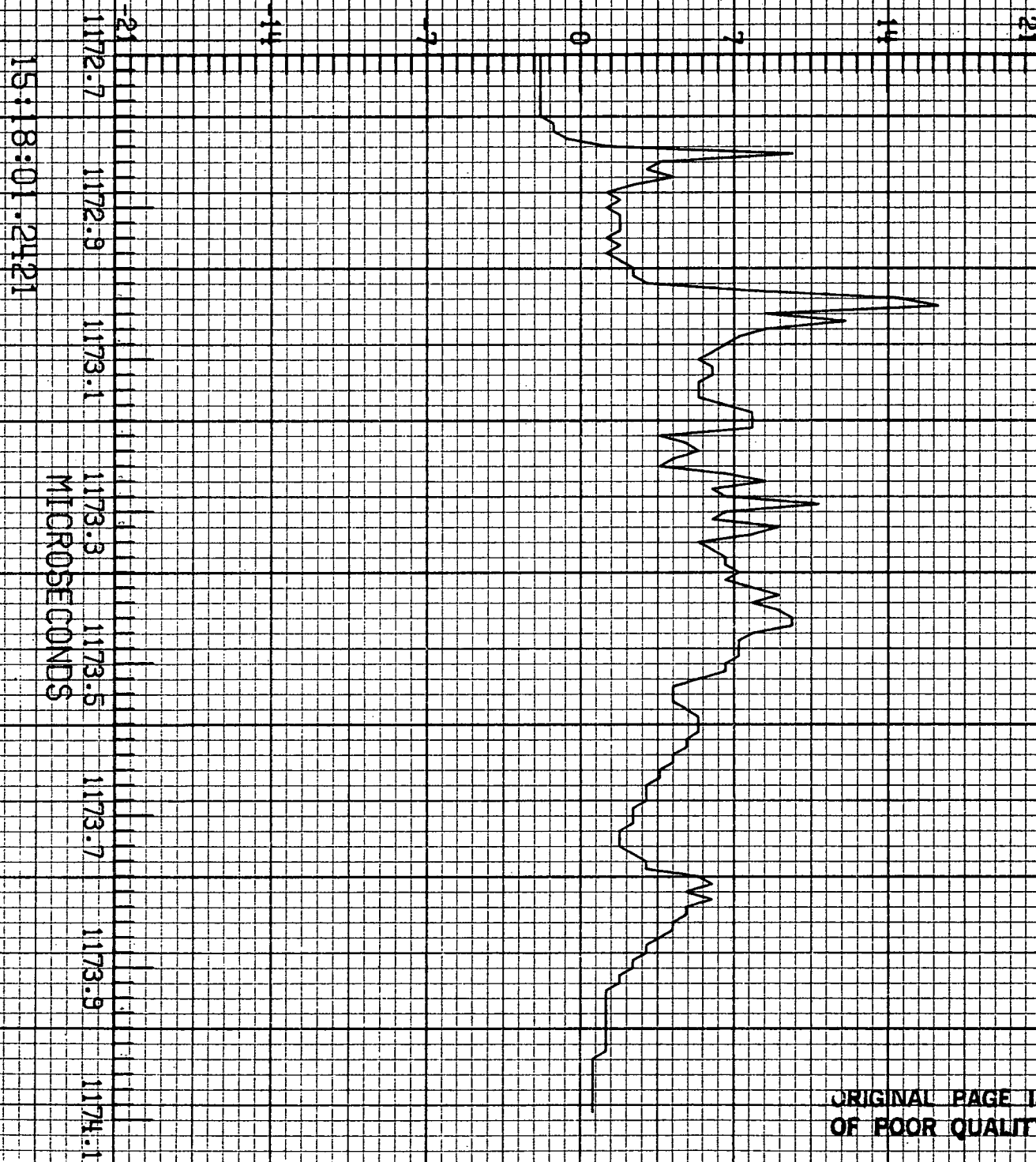
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TEST NO. 83-013

RUN NO. 10

S-010

D DOT FWD  $A/m^2$



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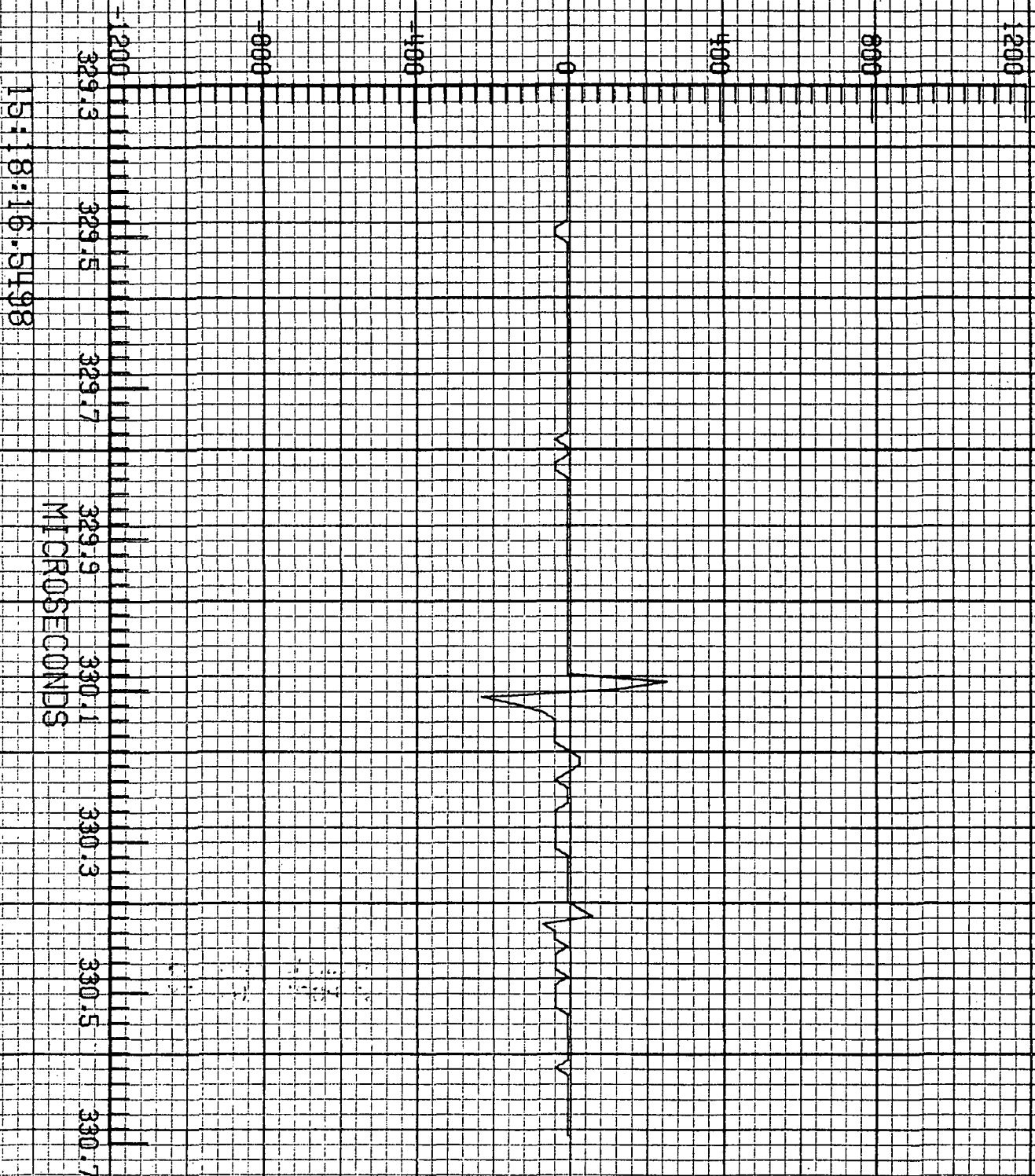
F106 LIGHTNING/83-013/M. THOMAS

TEST NO. 83-013

RUN NO. 11

S-011

B DOT L T/S



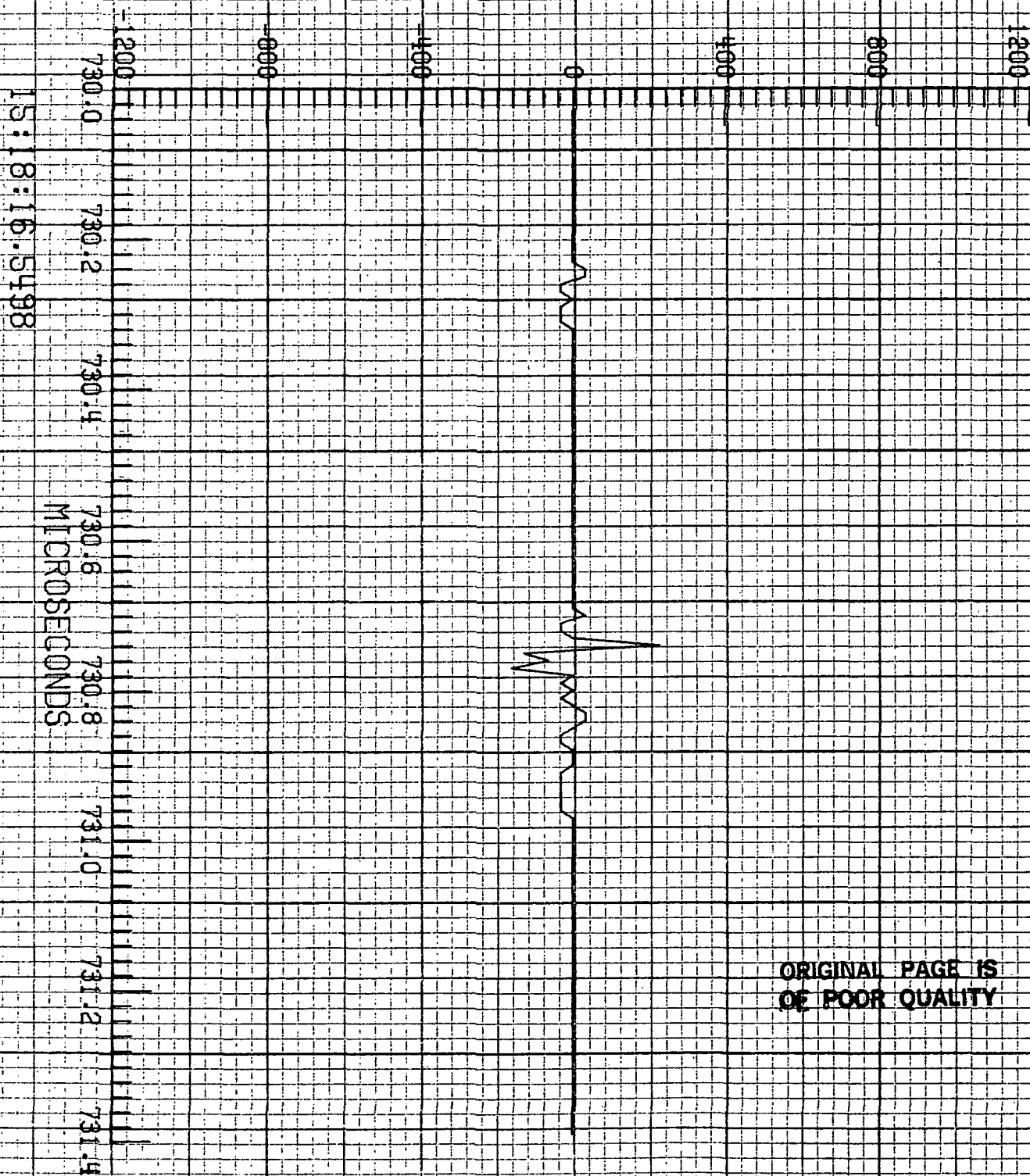
F106 LIGHTNING/83-013/M. THOMAS

TEST NO. 83-013

RUN NO. 11

S-011

B DOT L T/S



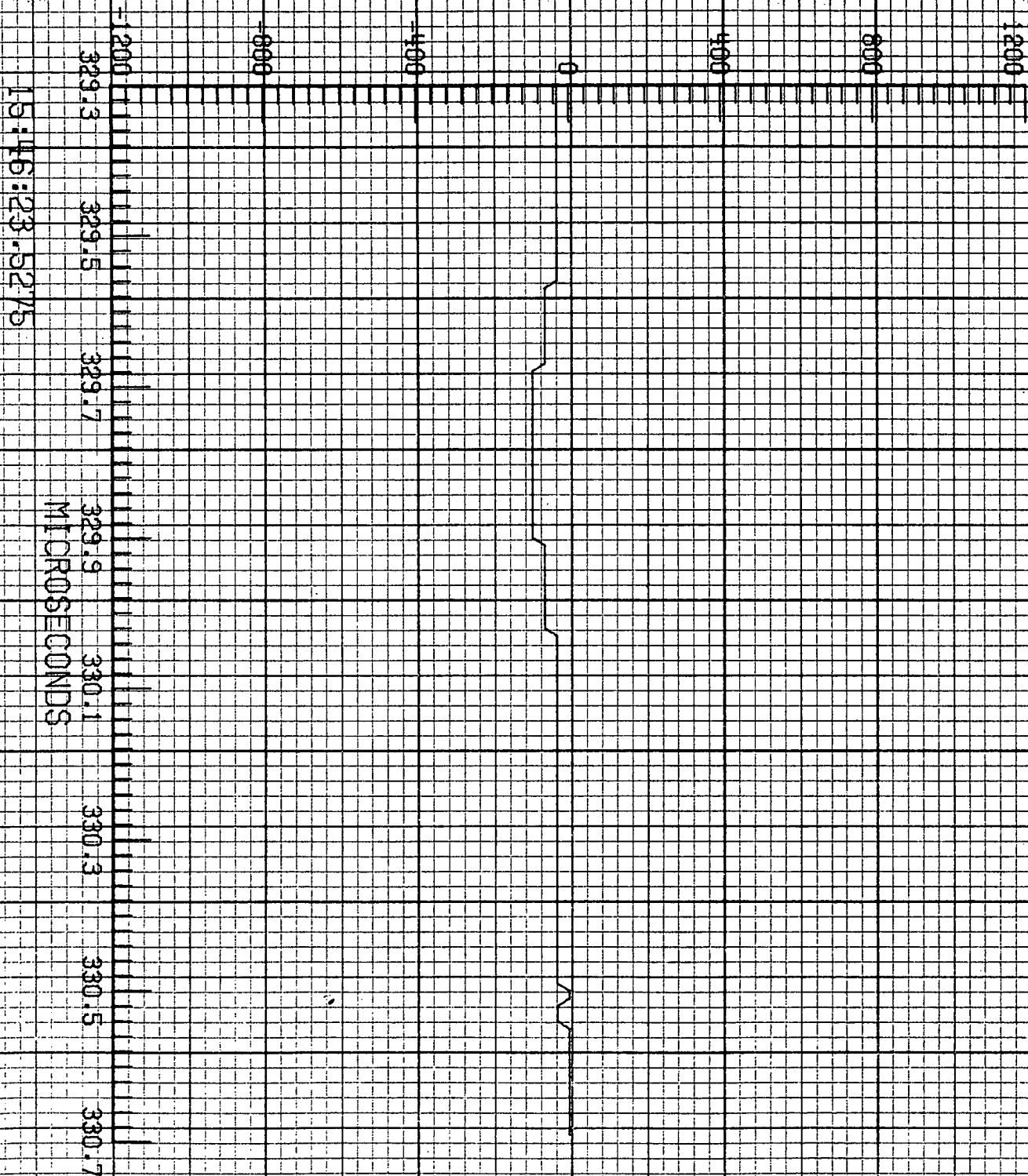
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F106 LIGHTNING/83-013/M. THOMAS  
RUN NO. 12 S-012

TEST NO. 83-013

B DOT L T/S





F106 LIGHTNING/83-013/M. THOMAS

TEST NO. 83-01

RUN NO. 12

S-012

D DOT FWD  $A/m^2$

-21 -14 -7 0 7 14 21

328

329

330

331

332

333

334

335

15:46:23.5283

MICROSECONDS

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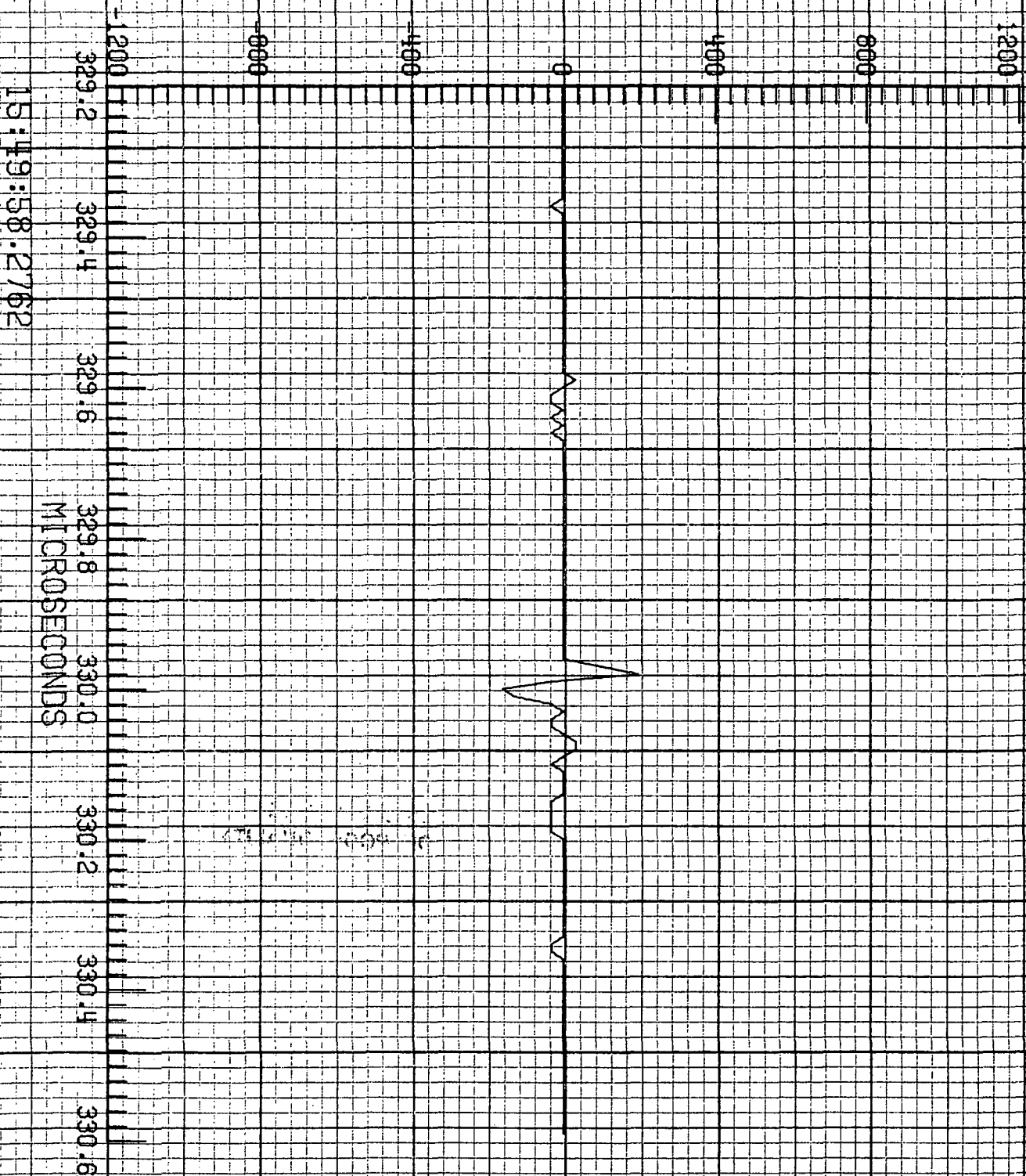
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TEST NO. 83-013

RUN NO. 13

S-013

B DOT L T/S



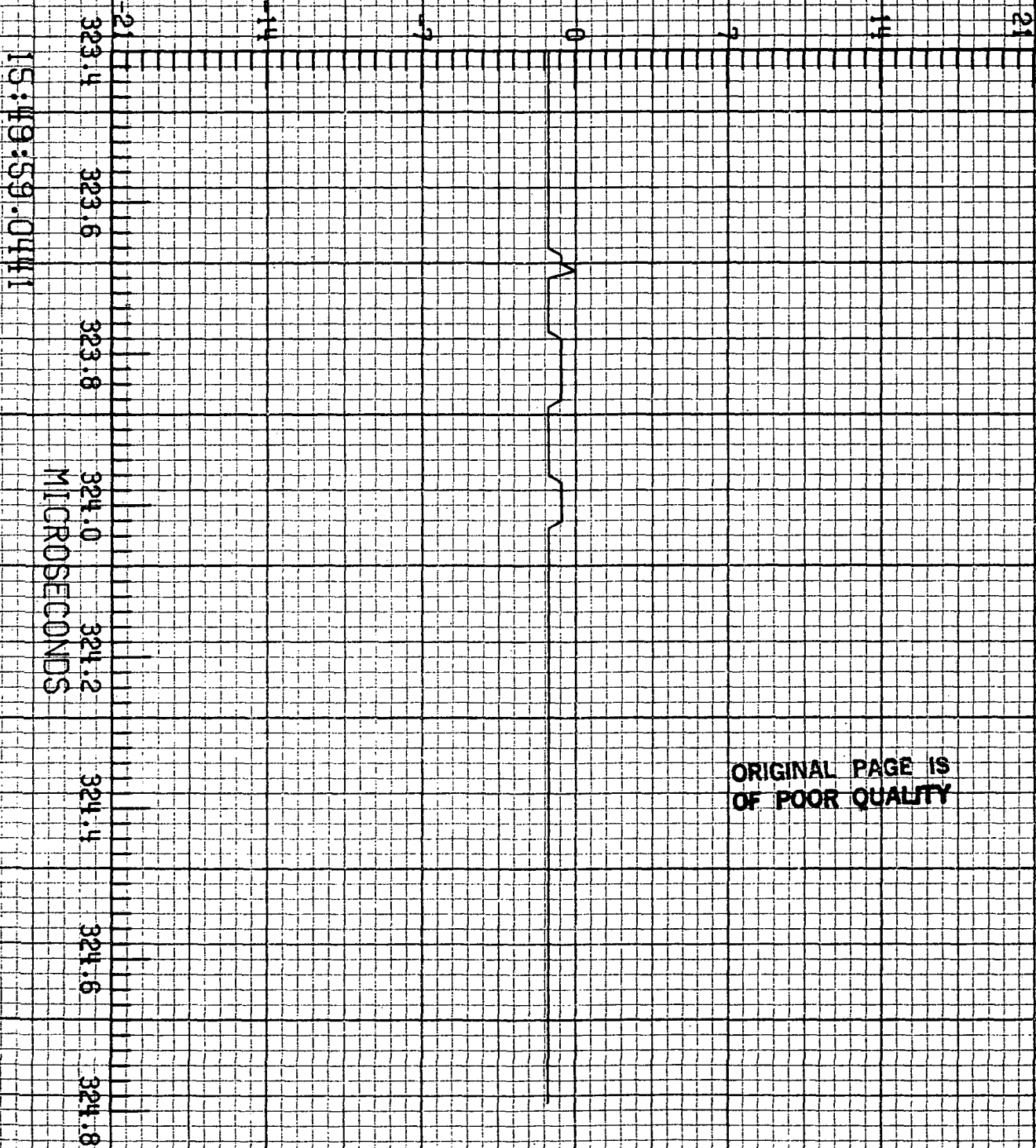
F106 LIGHTNING/83-013/M. THOMAS

TEST NO. 83-013

RUN NO. 13

S-013

D DOT FWD  $A/m^2$



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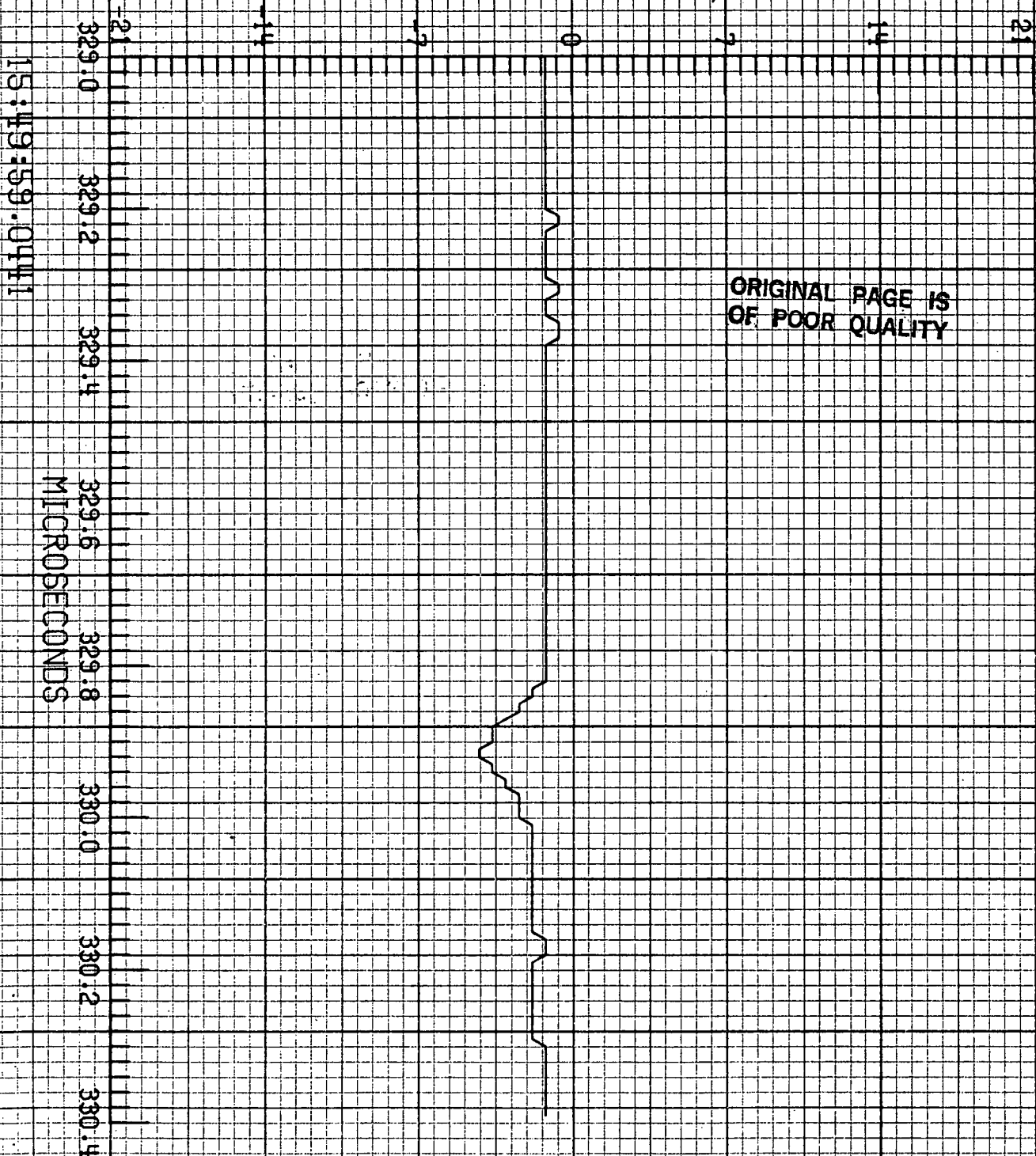
106 LIGHTNING/83-013/M. THOMAS

TEST NO. 83-013

RUN NO. 13

S-013

D DOT FWD  $A/m^2$



F106 LIGHTNING/83-013/M.THOMAS

TEST NO. 83-013

RUN NO. 14

S-014

B DOT L T/S

-200 -100 0 100 200 300 400 500 600 700 800 900 1000 1100 1200

329.4 329.6 329.8 330.0 330.2 330.4 330.6 330.8

15:50:34.9978

329.4 329.6 329.8 330.0 330.2 330.4 330.6 330.8

329.4 329.6 329.8 330.0 330.2 330.4 330.6 330.8

329.4 329.6 329.8 330.0 330.2 330.4 330.6 330.8

329.4 329.6 329.8 330.0 330.2 330.4 330.6 330.8

329.4 329.6 329.8 330.0 330.2 330.4 330.6 330.8

329.4 329.6 329.8 330.0 330.2 330.4 330.6 330.8

329.4 329.6 329.8 330.0 330.2 330.4 330.6 330.8

329.4 329.6 329.8 330.0 330.2 330.4 330.6 330.8

329.4 329.6 329.8 330.0 330.2 330.4 330.6 330.8

329.4 329.6 329.8 330.0 330.2 330.4 330.6 330.8

329.4 329.6 329.8 330.0 330.2 330.4 330.6 330.8

329.4 329.6 329.8 330.0 330.2 330.4 330.6 330.8

329.4 329.6 329.8 330.0 330.2 330.4 330.6 330.8

329.4 329.6 329.8 330.0 330.2 330.4 330.6 330.8

329.4 329.6 329.8 330.0 330.2 330.4 330.6 330.8

329.4 329.6 329.8 330.0 330.2 330.4 330.6 330.8

329.4 329.6 329.8 330.0 330.2 330.4 330.6 330.8

329.4 329.6 329.8 330.0 330.2 330.4 330.6 330.8

329.4 329.6 329.8 330.0 330.2 330.4 330.6 330.8

329.4 329.6 329.8 330.0 330.2 330.4 330.6 330.8

329.4 329.6 329.8 330.0 330.2 330.4 330.6 330.8

329.4 329.6 329.8 330.0 330.2 330.4 330.6 330.8

329.4 329.6 329.8 330.0 330.2 330.4 330.6 330.8

329.4 329.6 329.8 330.0 330.2 330.4 330.6 330.8

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329.4 329.6 329.8 330.0 330.2 330.4 330.6 330.8

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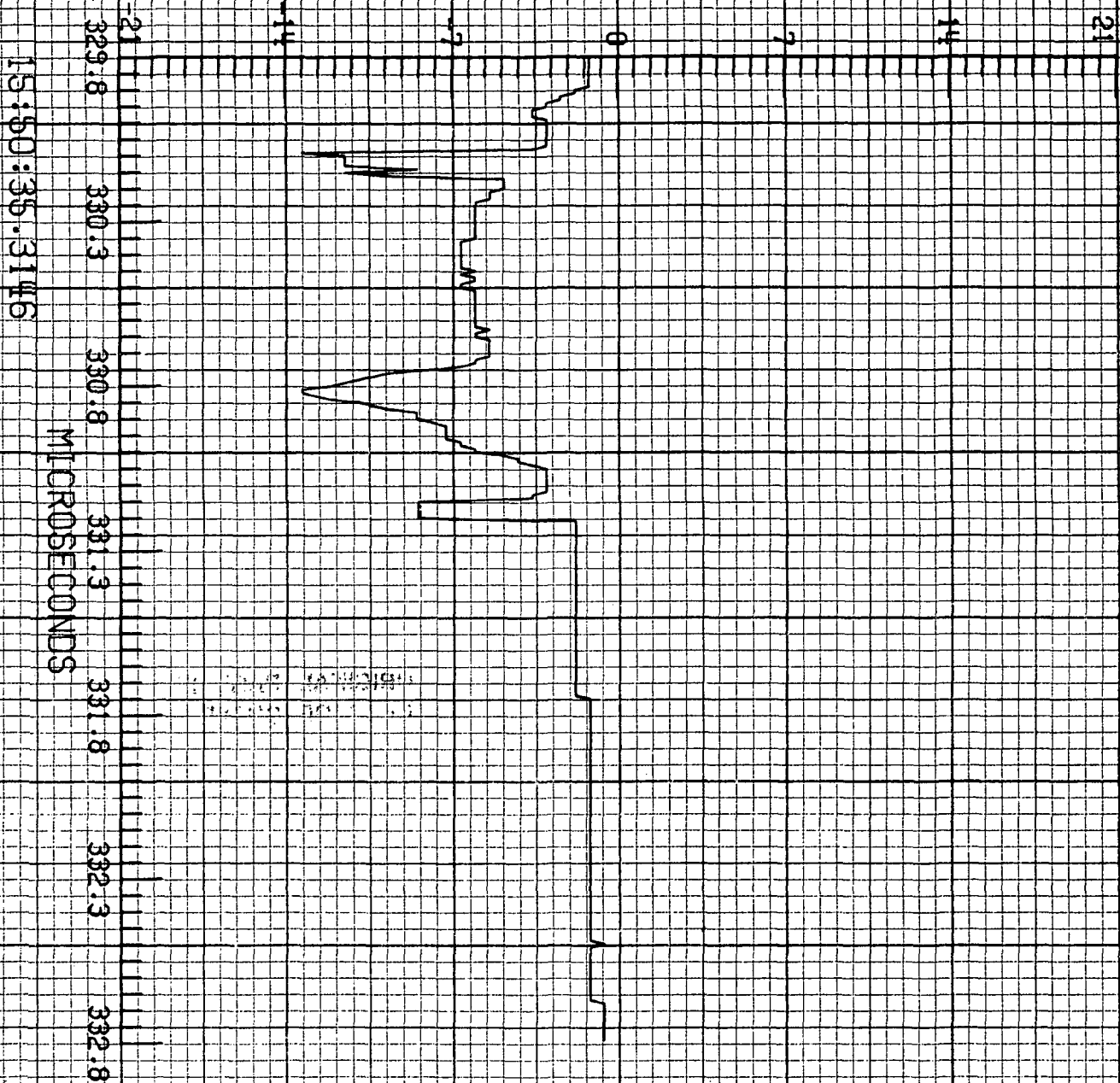
F106 LIGHTNING/83-013/M. THOMAS

TEST NO. 83-01

RUN NO. 14

S-014

D DOT FWD  $A/m^2$



F106 LIGHTNING/TK-8/M. THOMAS

TEST NO. 83-015

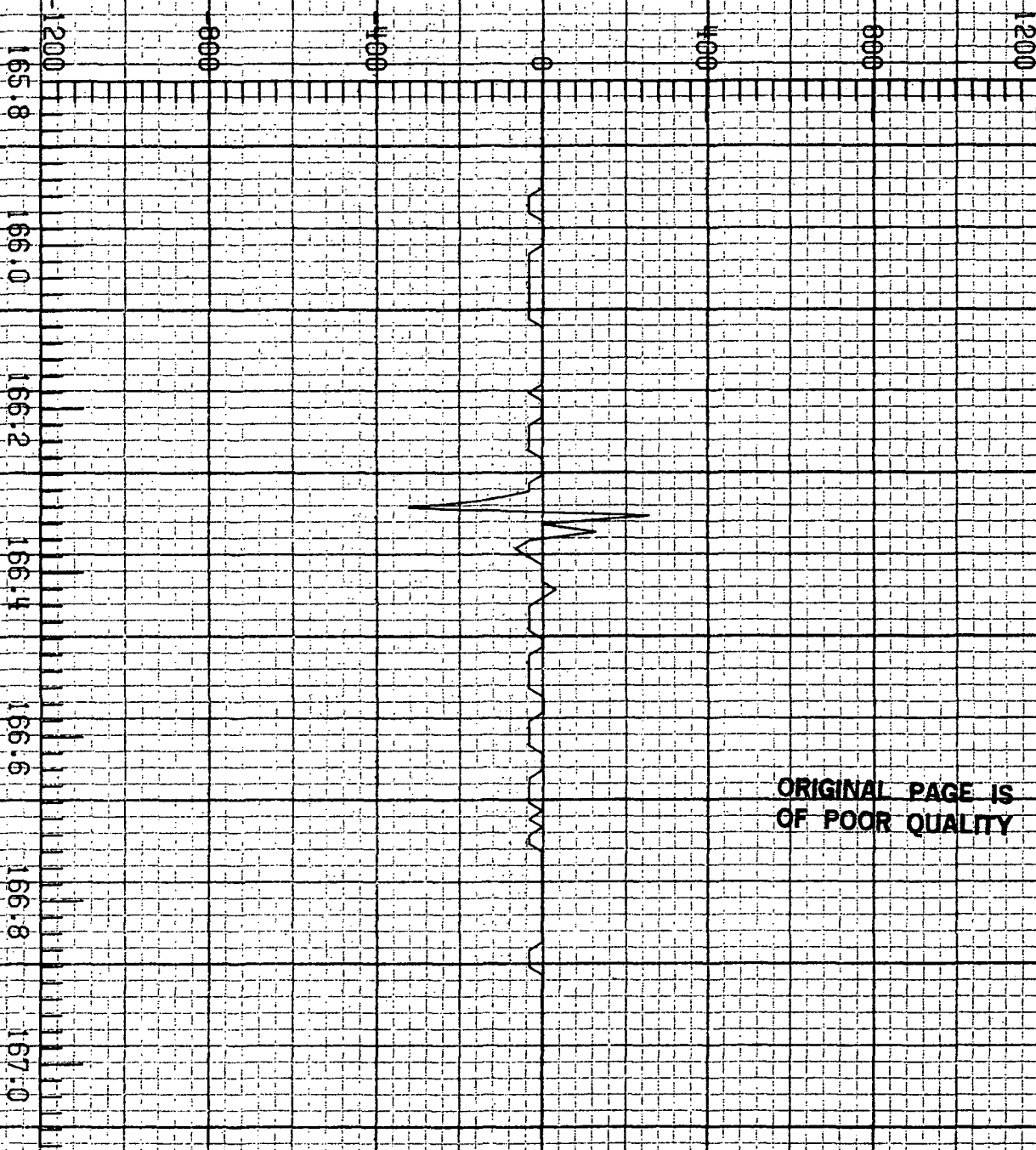
RUN NO. 1

S-001

B DOT L T/S

18:26:37.3896

MICROSECONDS



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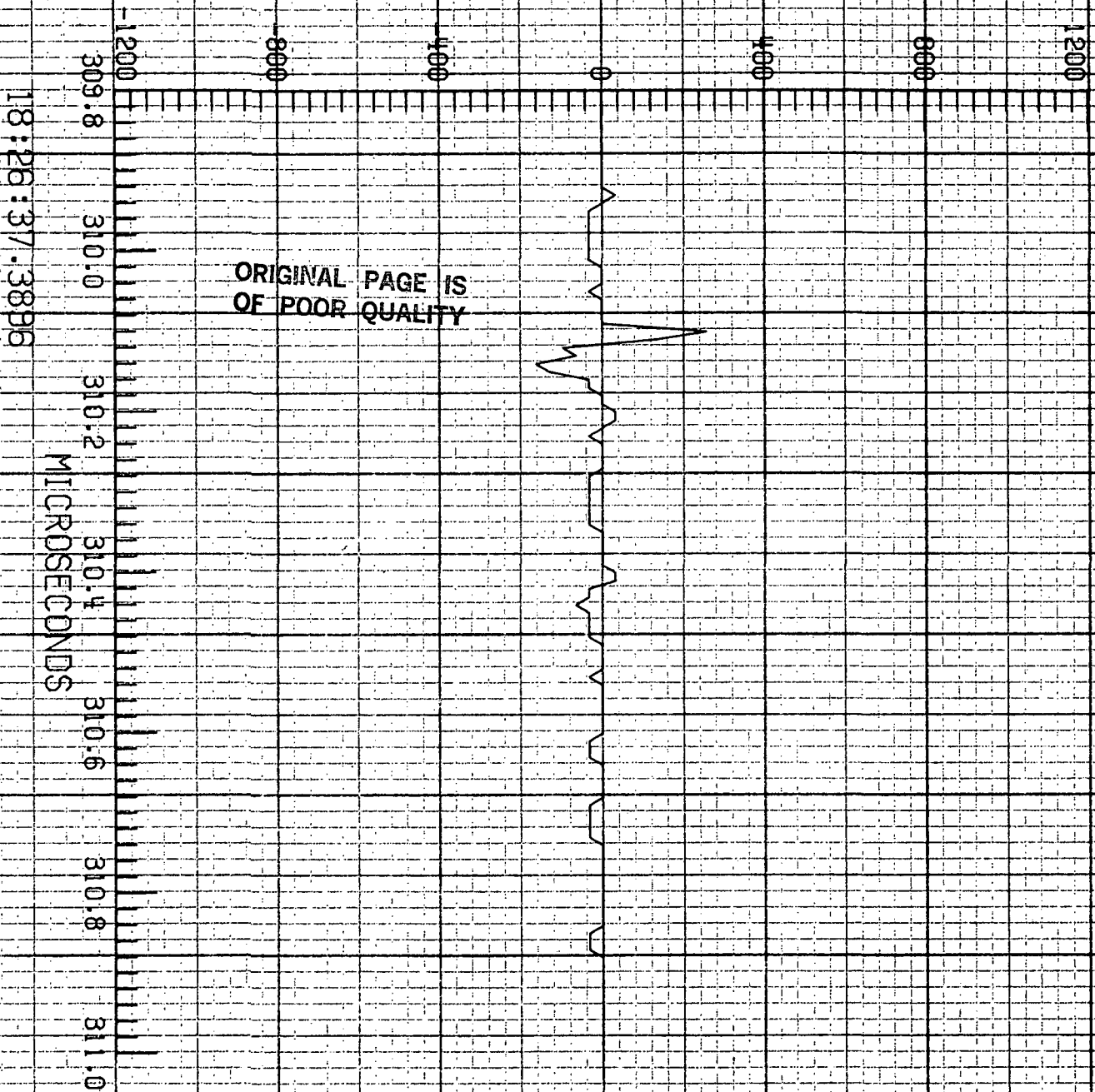
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TEST NO. 83-019

RUN NO. 1

S-001

B DOT II T/S





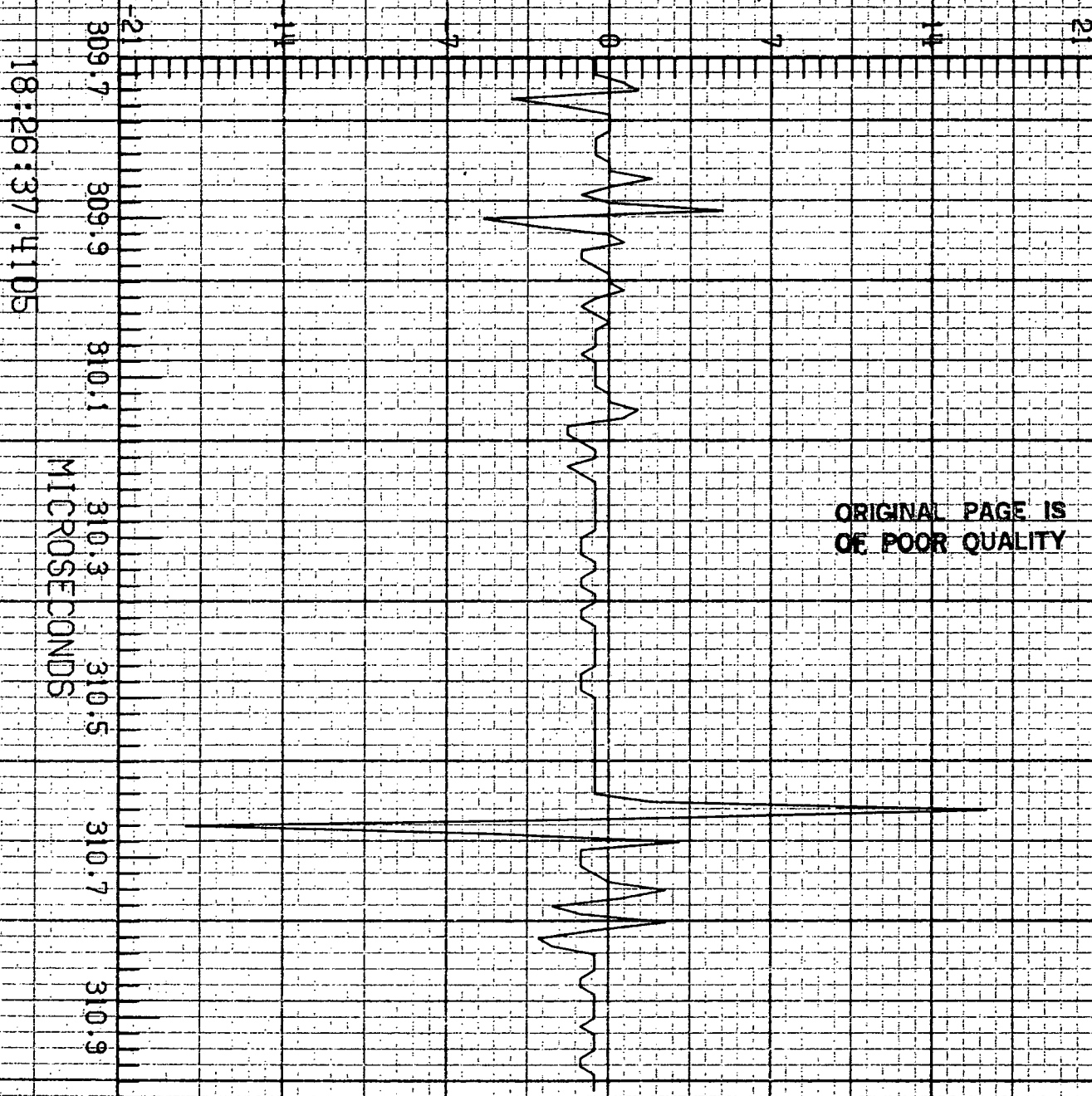
F106 LIGHTNING/TK-10/M. THOMAS

TEST NO. 83-01

RUN NO. 1

S-001

D DOT FWD  $A/m^2$



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F106 LIGHTNING/TK-8/M. THOMAS

TEST NO. 83-01

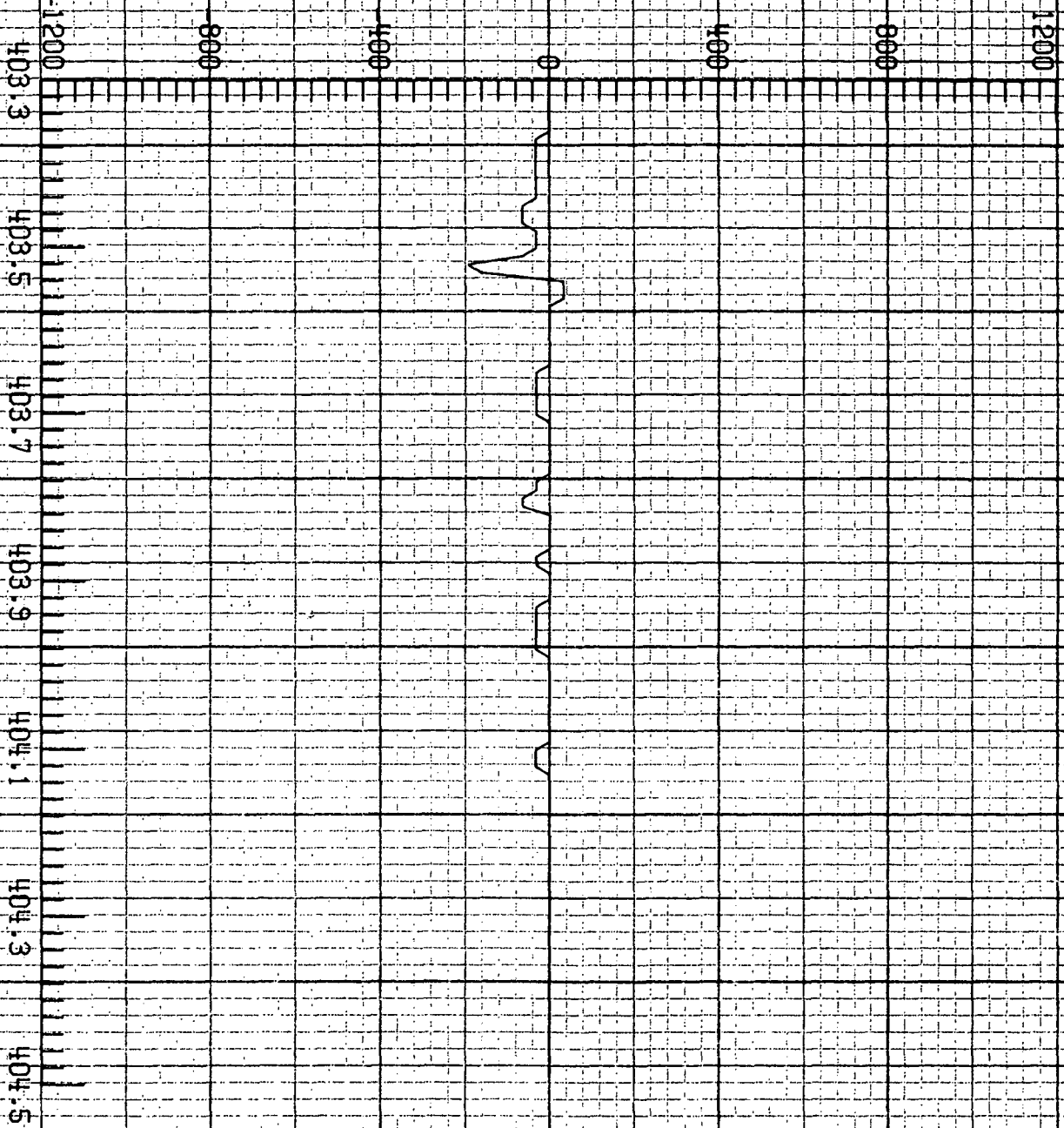
RUN NO. 1

S-001

B DOT L T/S

18:26:37.3896

MICROSECONDS



F106 LIGHTNING/TK-8/M.THOMAS

TEST NO. 83-01

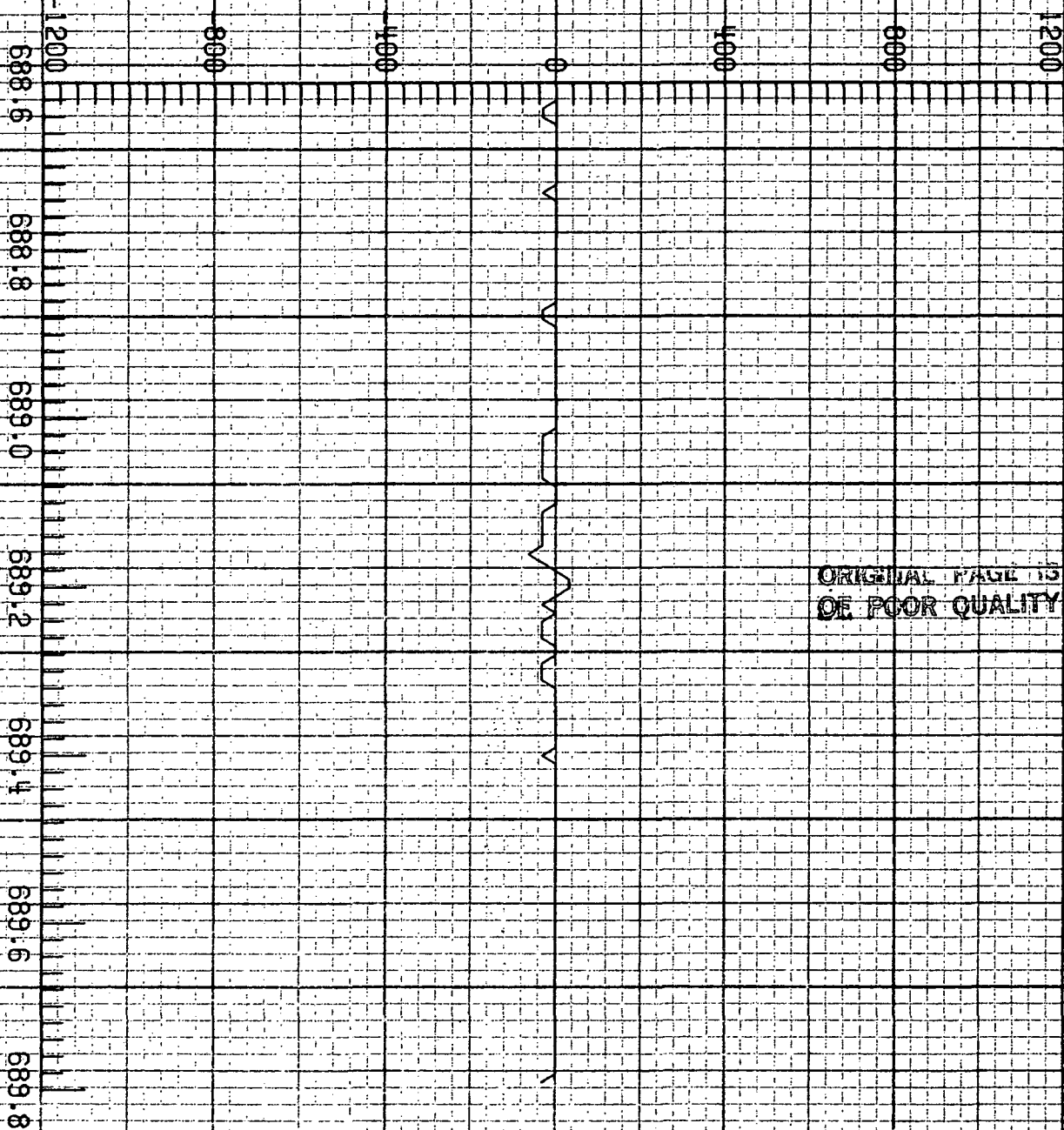
RUN NO. 1

S-001

B DOT L I/S

18:26:37.3896

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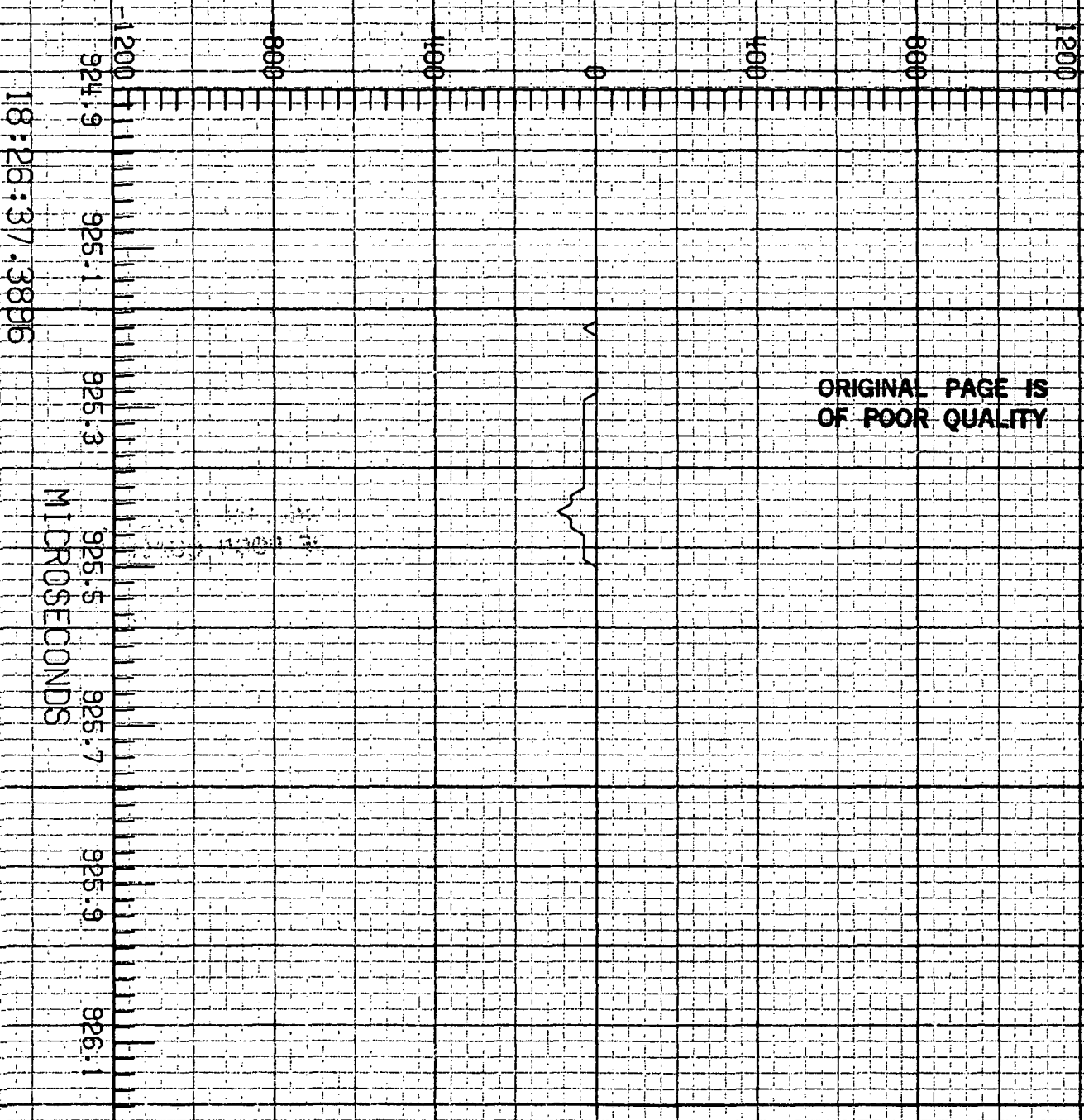
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TEST NO. 83-01

RUN NO. 1

S-001

B DOT L T/S



F106 LIGHTNING/TK-8/M.THOMAS

TEST NO. 83-01

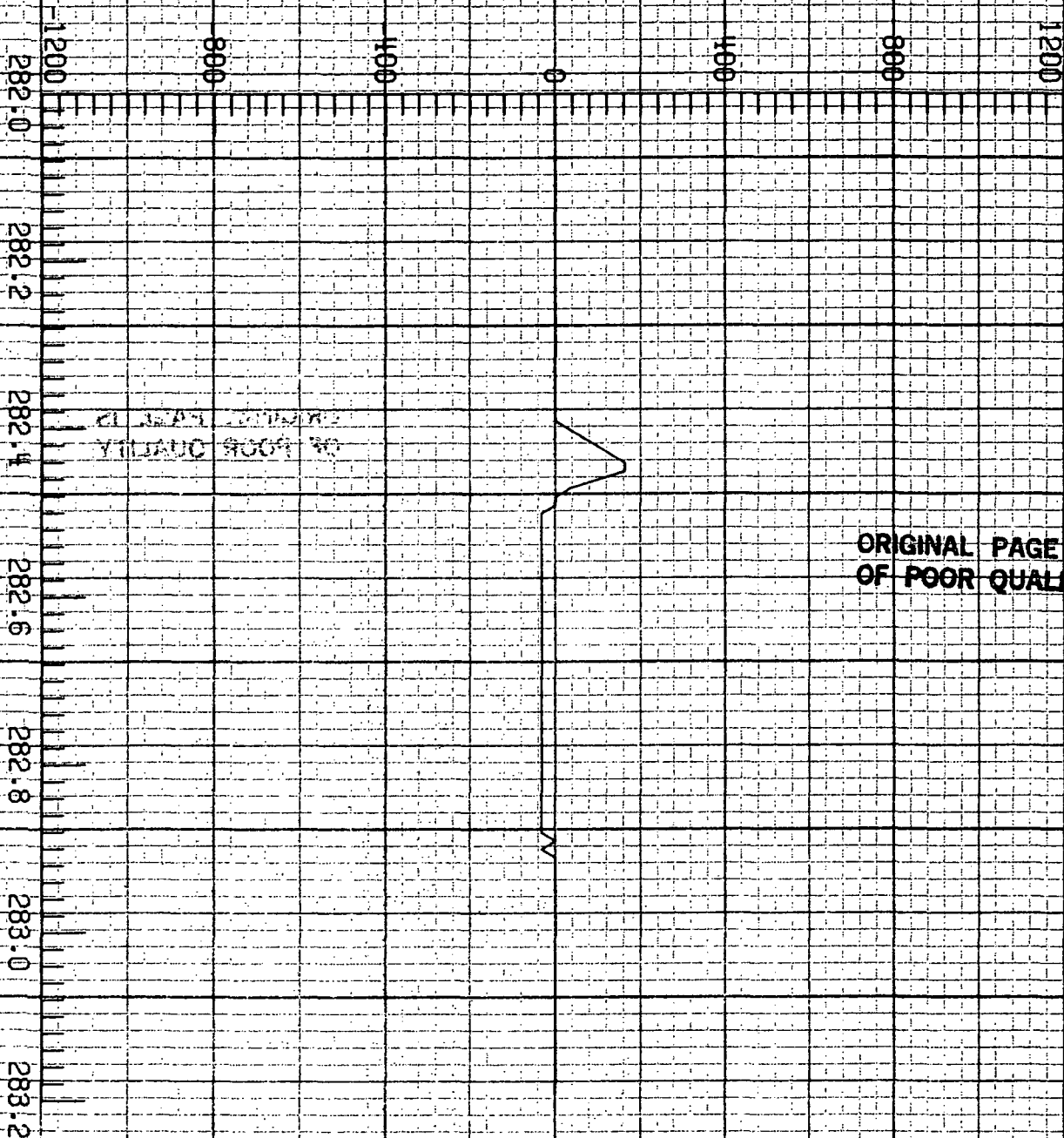
RUN NO. 2

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B DOT L T/S

18:56:43.0708

MICROSECONDS



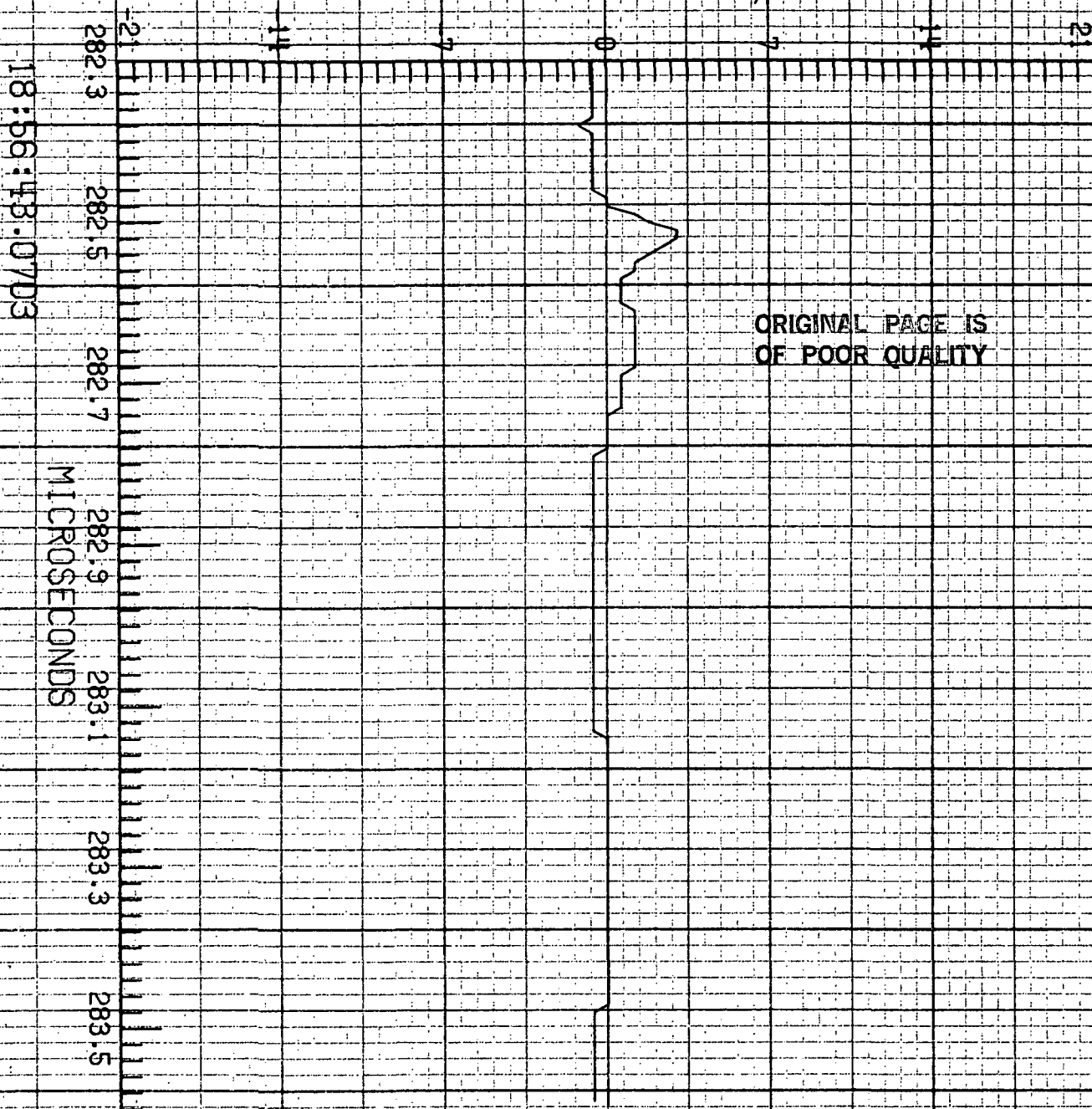
F106 LIGHTNING/TK-10/M.THOMAS

TEST NO. 83-01

RUN NO. 2

S-002

D DOT FWD  $A/m^2$



F106 LIGHTNING/TK-8/M. THOMAS

TEST NO. 83-01

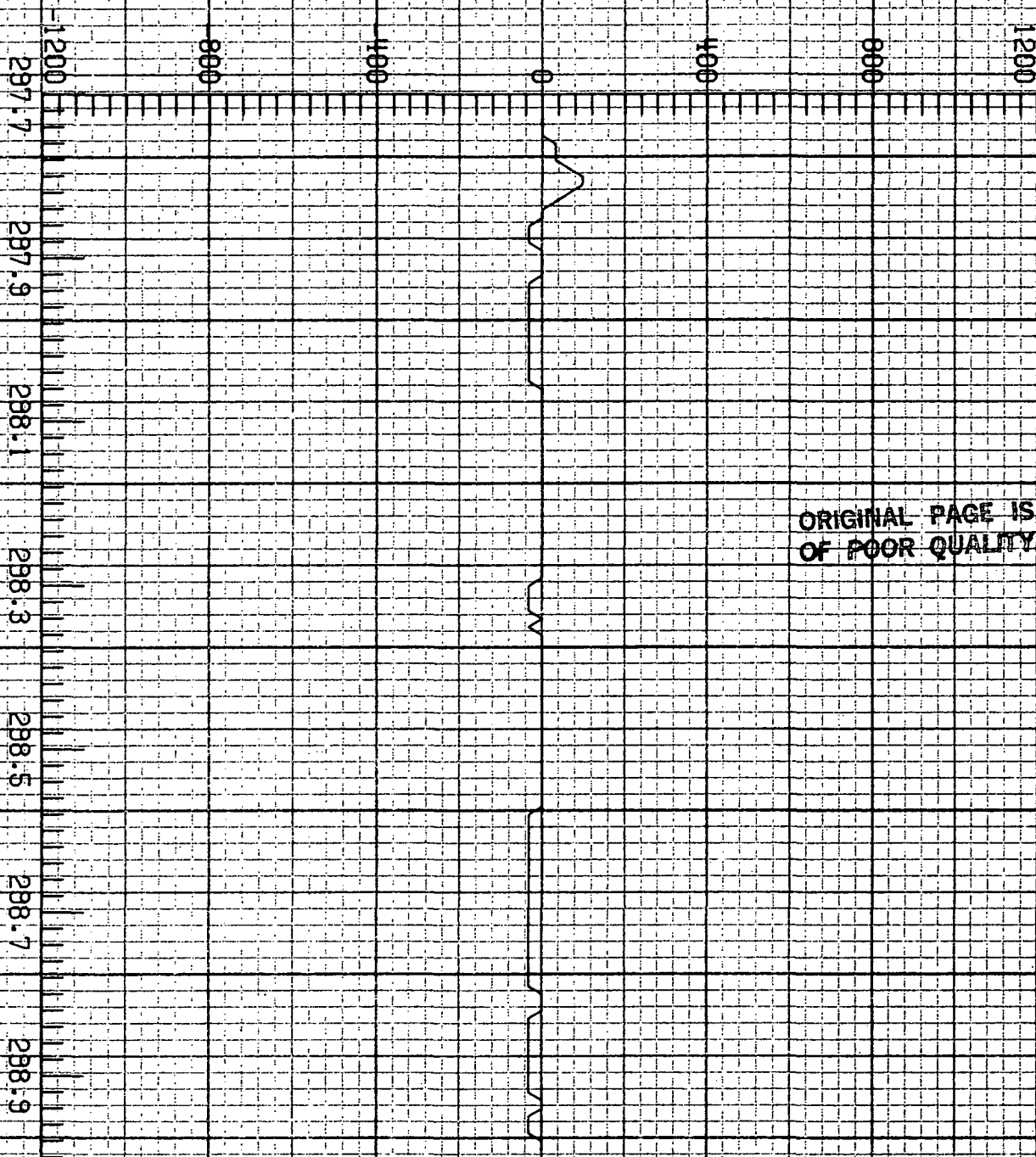
RUN NO. 2

S-002

B DOT L T/S

18:56:43.0708

MICROSECONDS



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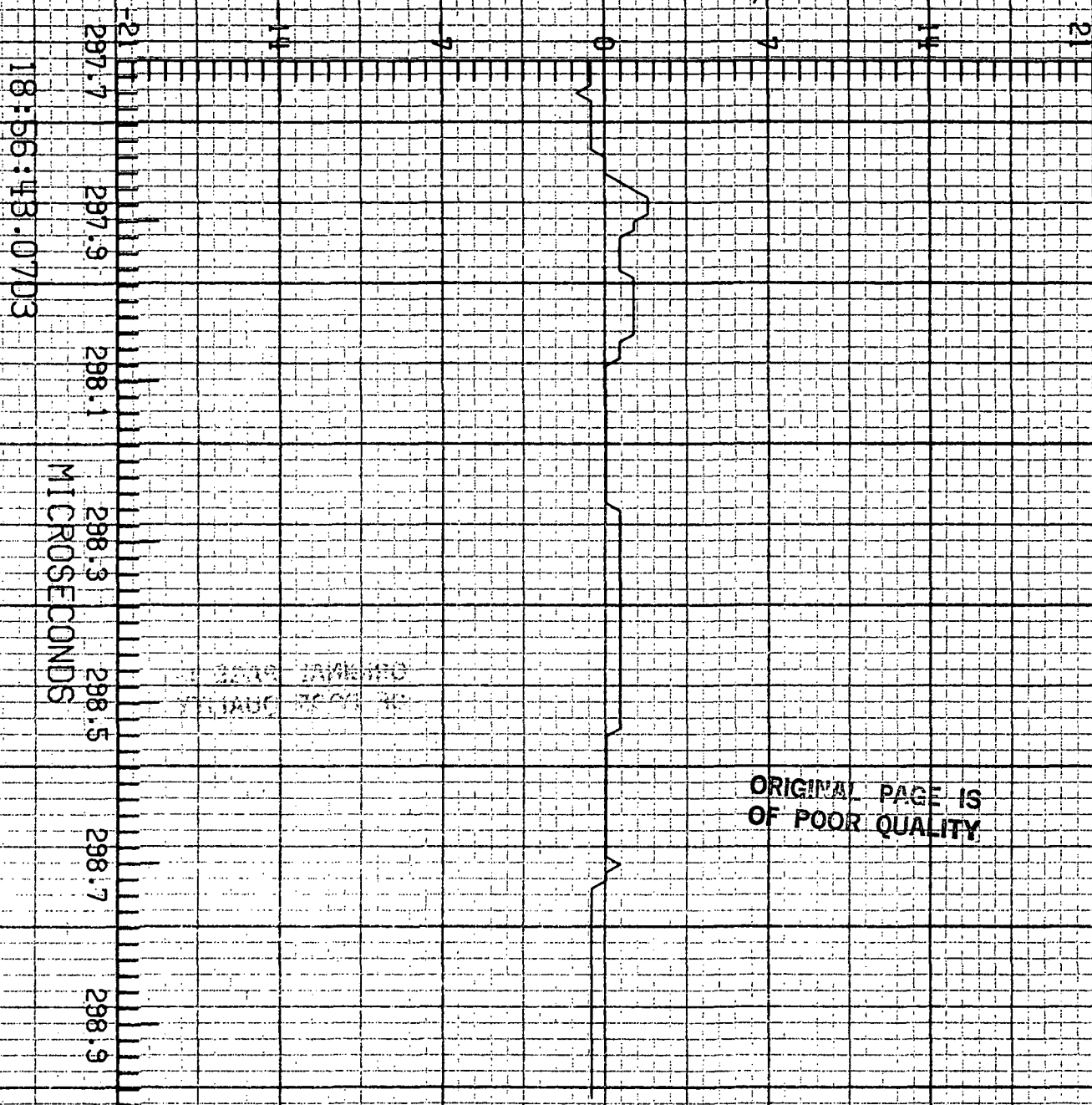
F106 LIGHTNING/TK-10/M. THOMAS

TEST NO. 83-013

RUN NO. 2

S-002

D DOT FWD  $A/m^2$





106 LIGHTNING/TK-8/M.THOMAS

TEST NO. 83-019

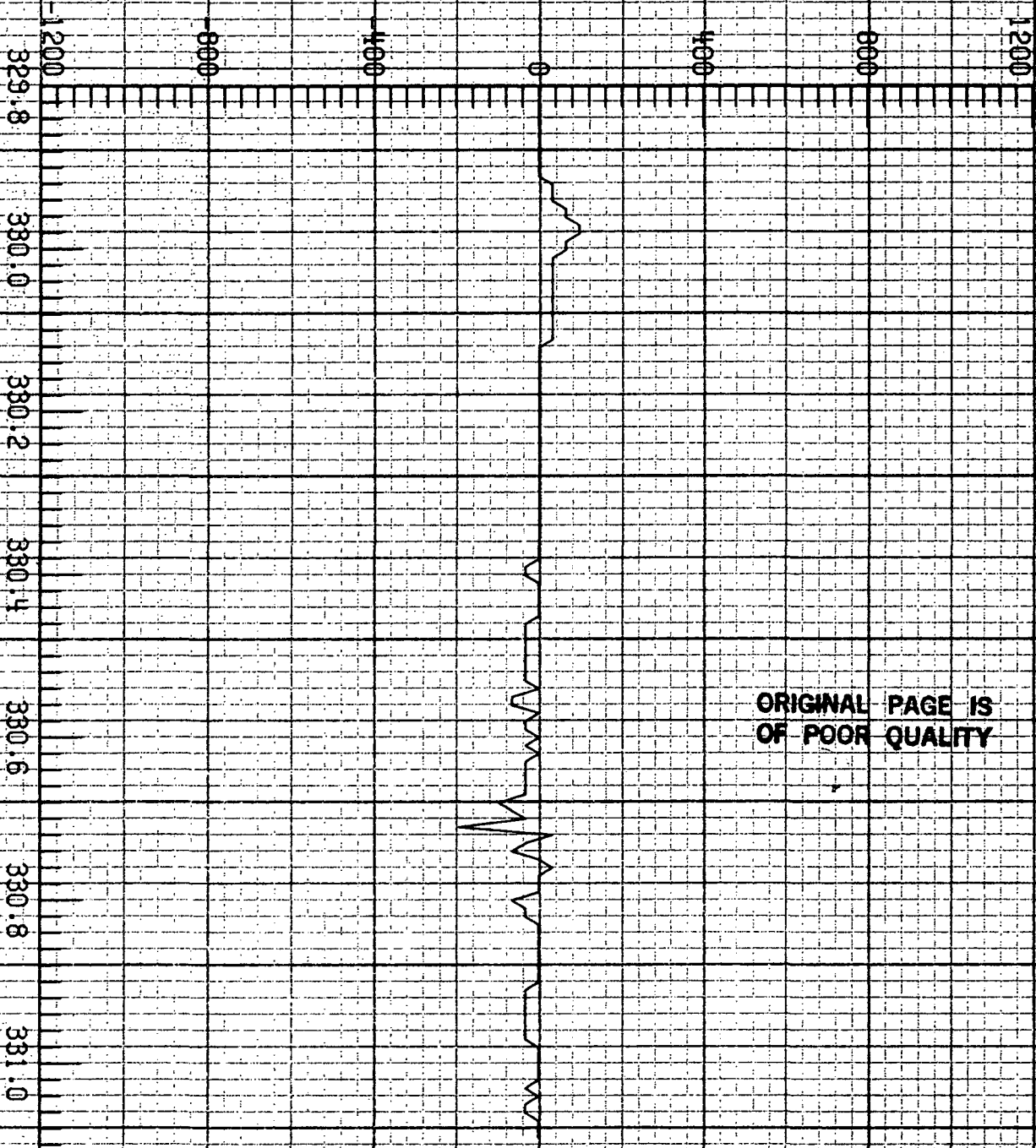
RUN NO. 2

S-002

B DOT L T/S

18:56:43.0/08

MICROSECONDS



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F106 LIGHTNING/TK-10/M.THOMAS

TEST NO. 83-019

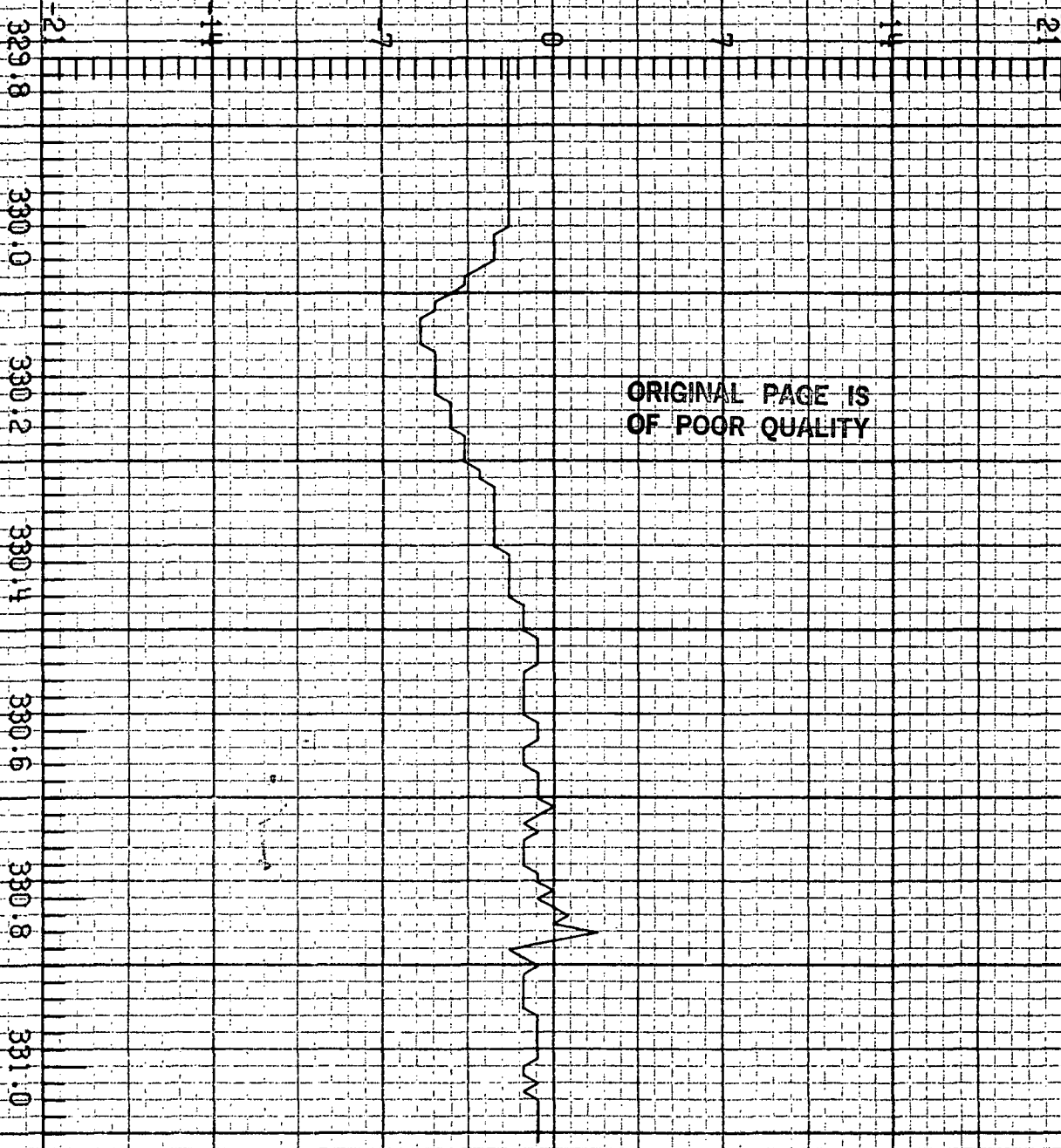
RUN NO. 2

S-002

D DOT FWD  $A/m^2$

18:55:43.0703

MICROSECONDS



106 LIGHTNING/TK-8/M.THOMAS

TEST NO. 83-015

RUN NO. 2

S-002

B DOT 1 T/S

18:56:48.0708

MICROSECONDS

358.0

358.2

358.4

358.6

358.8

359.0

359.2

1200

800

400

0

400

800

1200

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106 LIGHTNING/TK-10/M. THOMAS

TEST NO. 83-015

RUN NO. 2

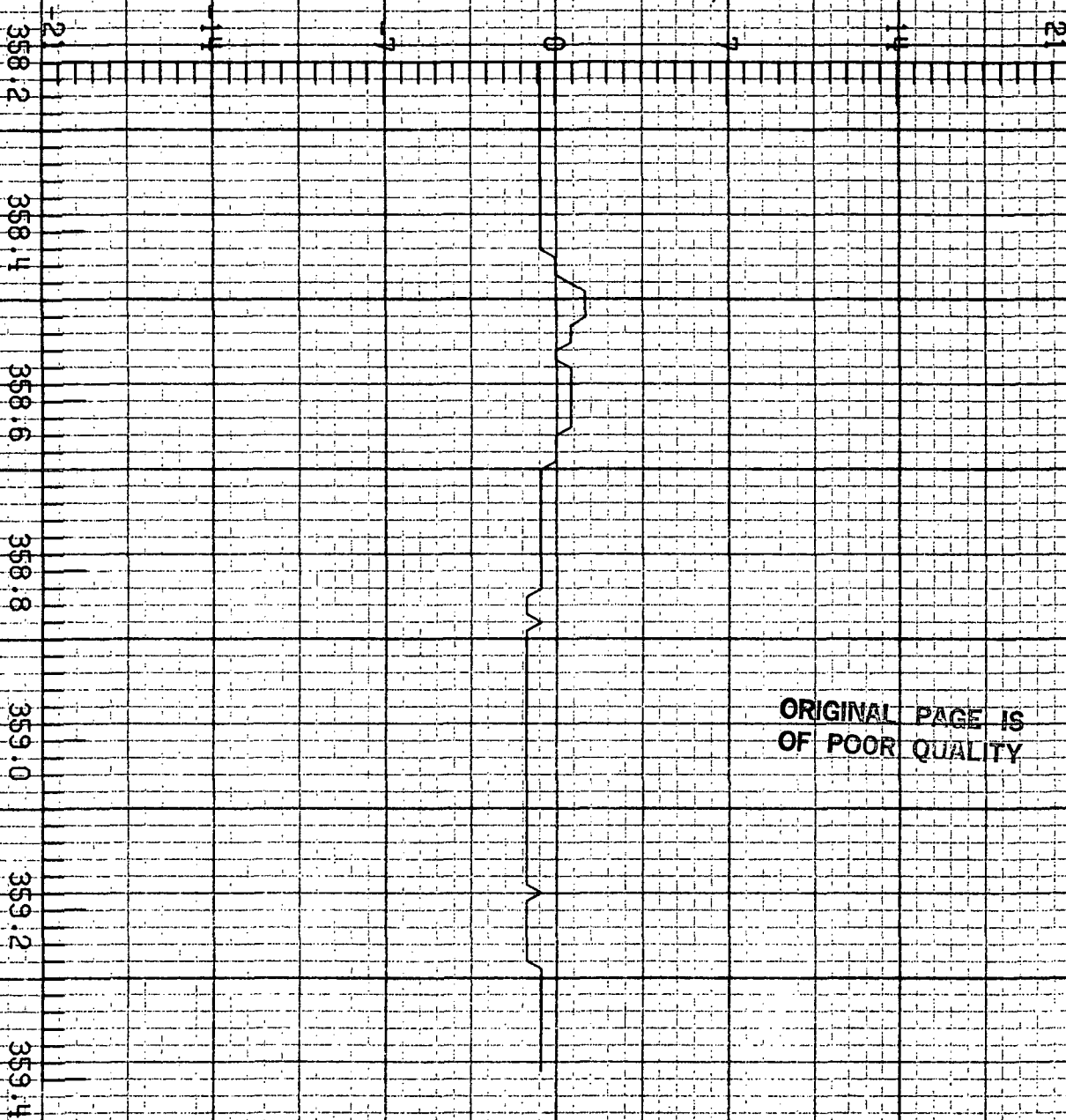
S-002

D DOT FWD

A/m<sup>2</sup>

18:56:43.0703

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F106 LIGHTNING/TK-8/M. THOMAS

TEST NO. 83-019

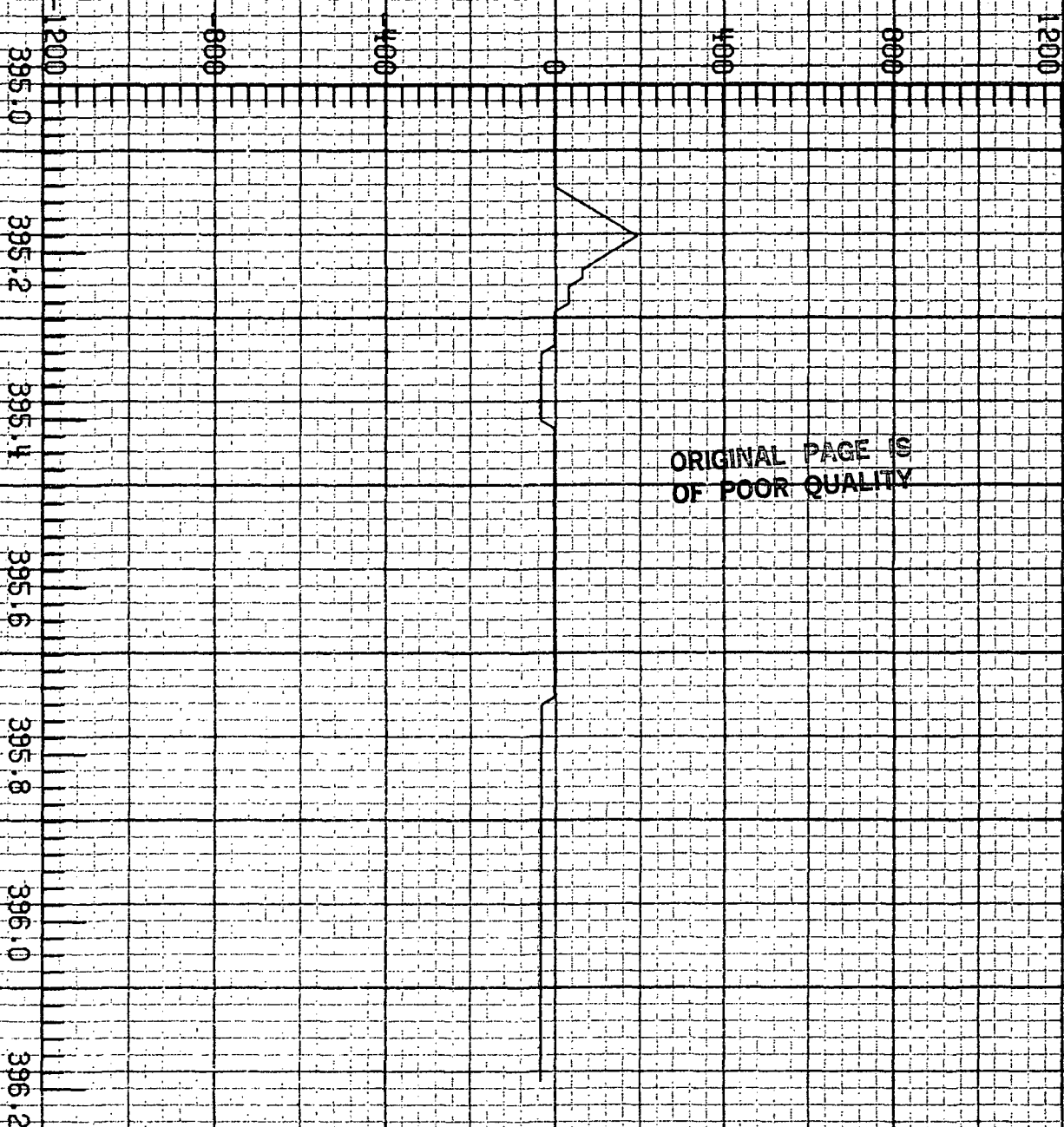
RUN NO. 2

S-002

B DOT L T/S

18:56:13.0708

MICROSECONDS



F106 LIGHTNING/TK-10/M.THOMAS

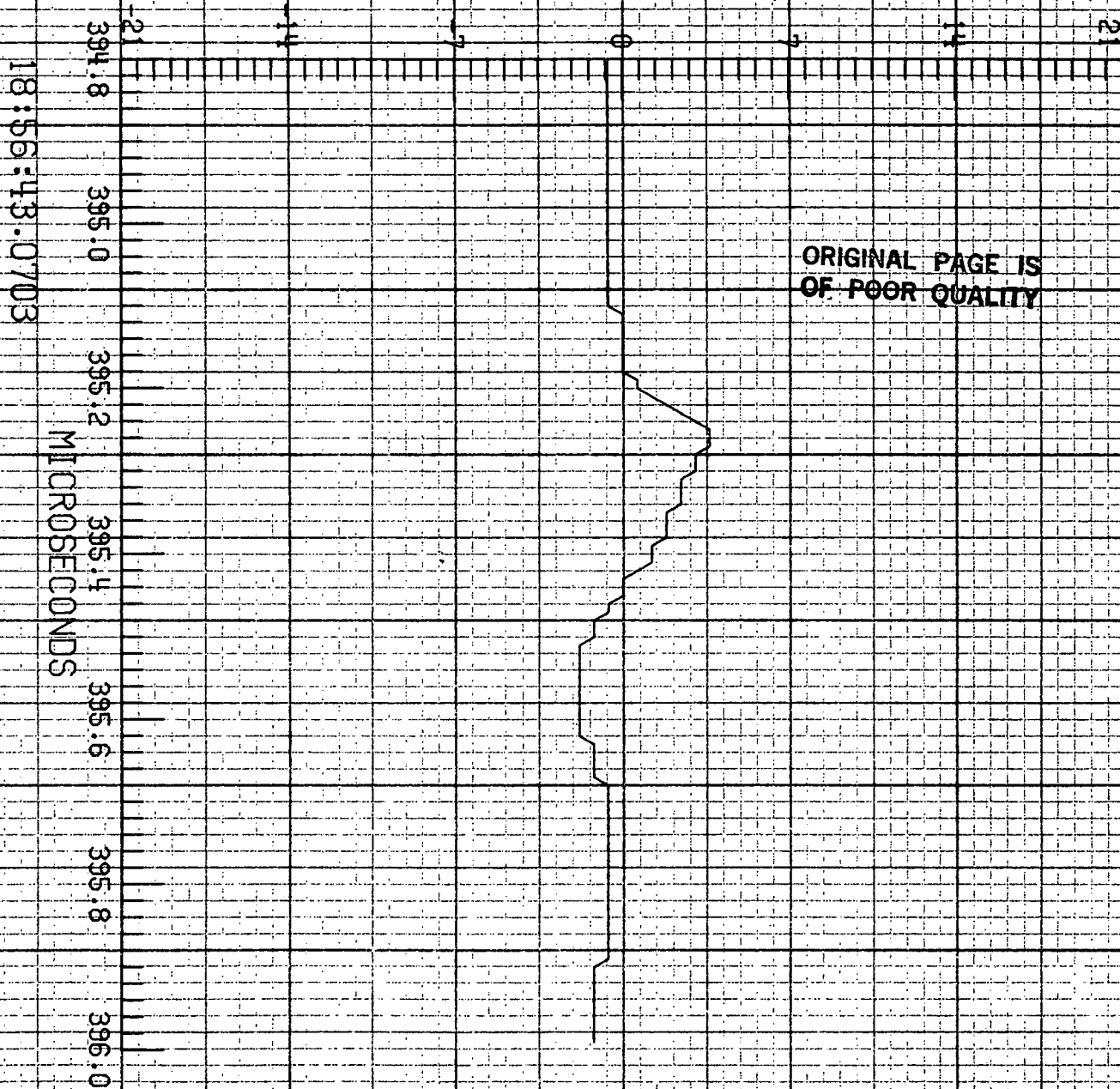
TEST NO. 83-015

RUN NO. 2

S-002

D DOT FWD

A/m<sup>2</sup>



F106 LIGHTNING/TK-10/M. THOMAS

TEST NO. 83-016

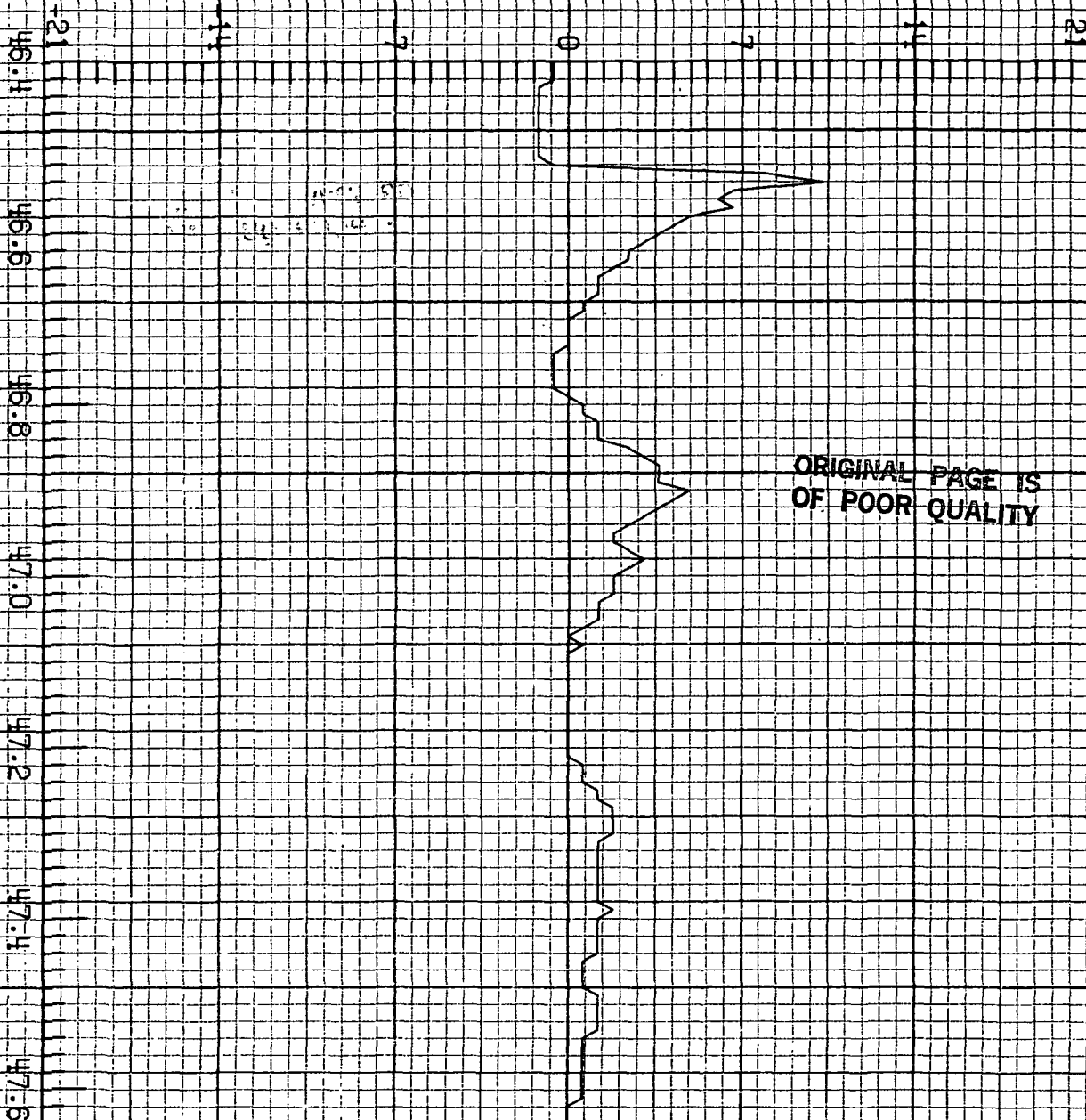
RUN NO. 1

N=001

D DOT FWD  $A/m^2$

21:35:34.900H

MICROSECONDS



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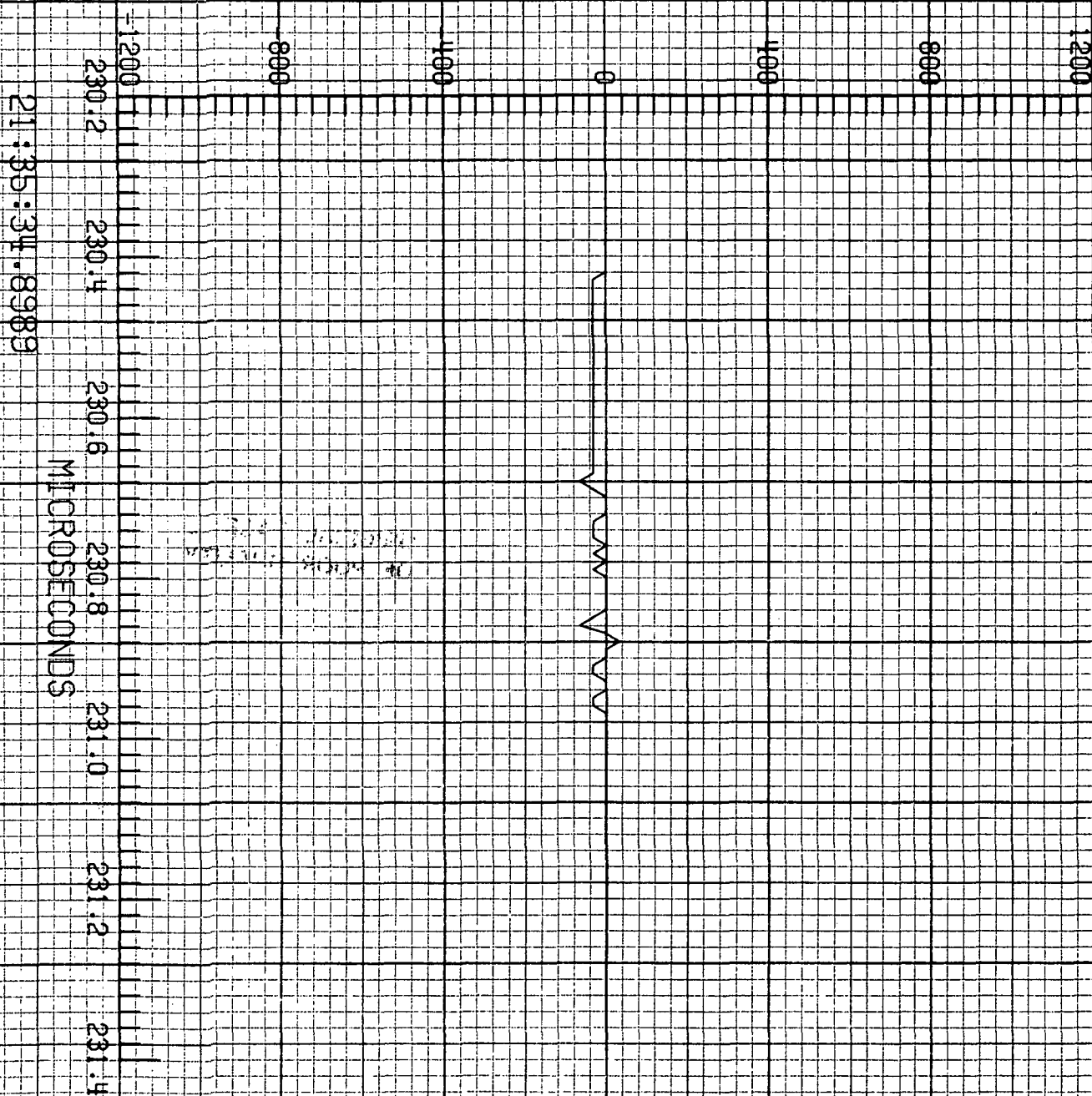
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TEST NO. 83-016

RUN NO. 1

N-001

B DOT L I/S





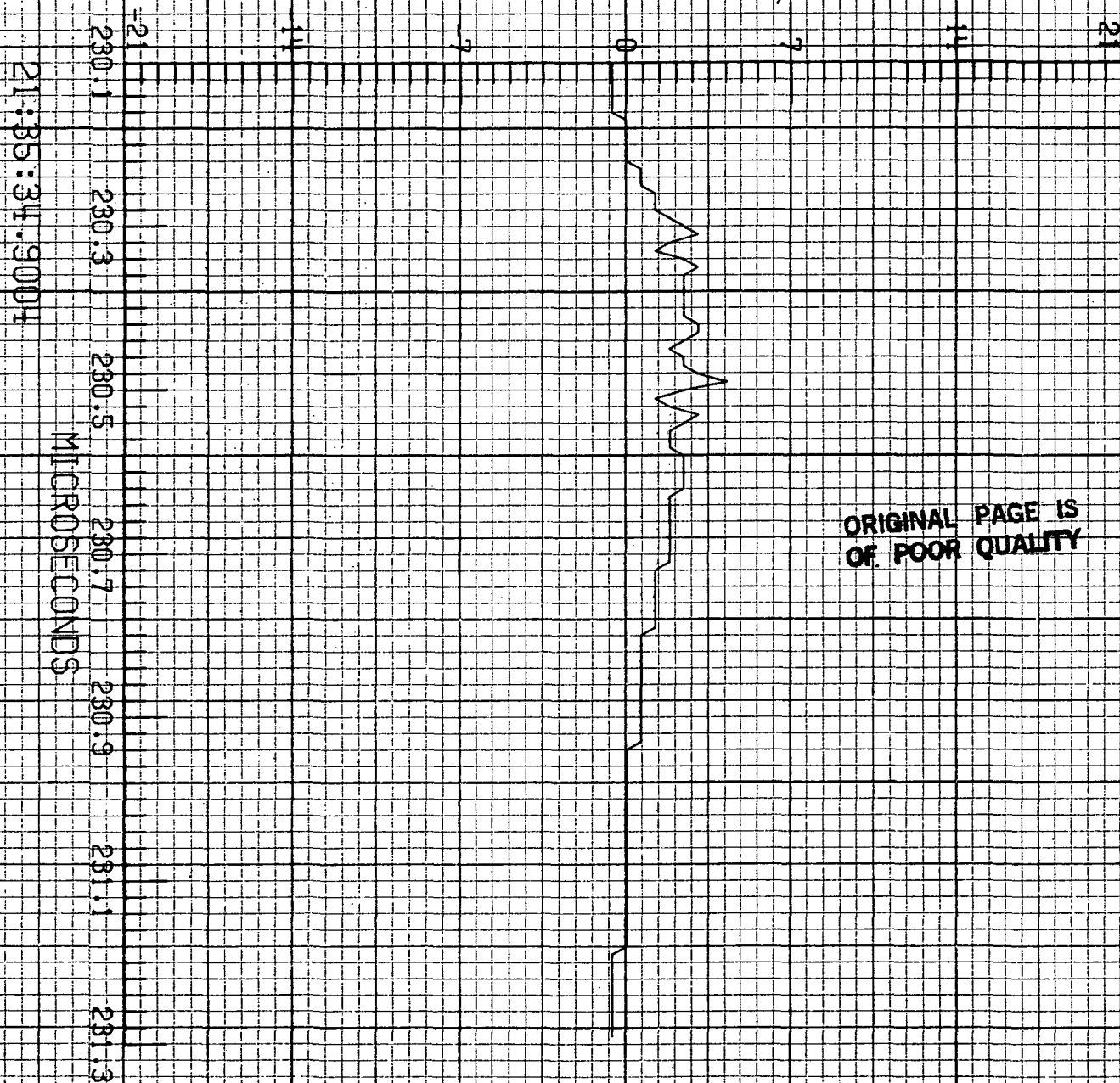
F106 LIGHTNING/TK-10/M. THOMAS

TEST NO. 83-011

RUN NO. 1

N-001

D DOT FWD  $A/m^2$



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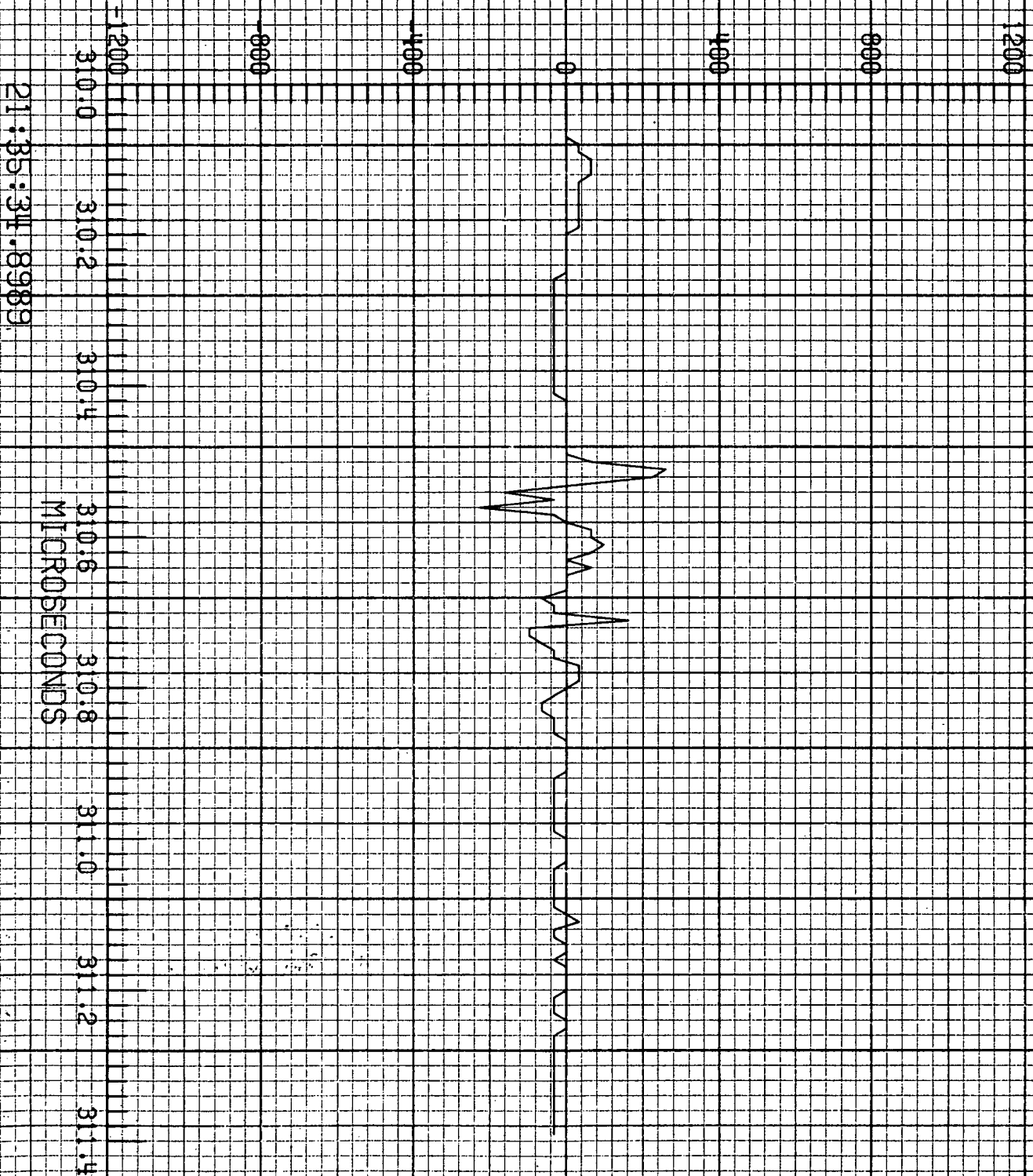
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TEST NO. 83-01

RUN NO. 1

N-001

B DOT L T/S



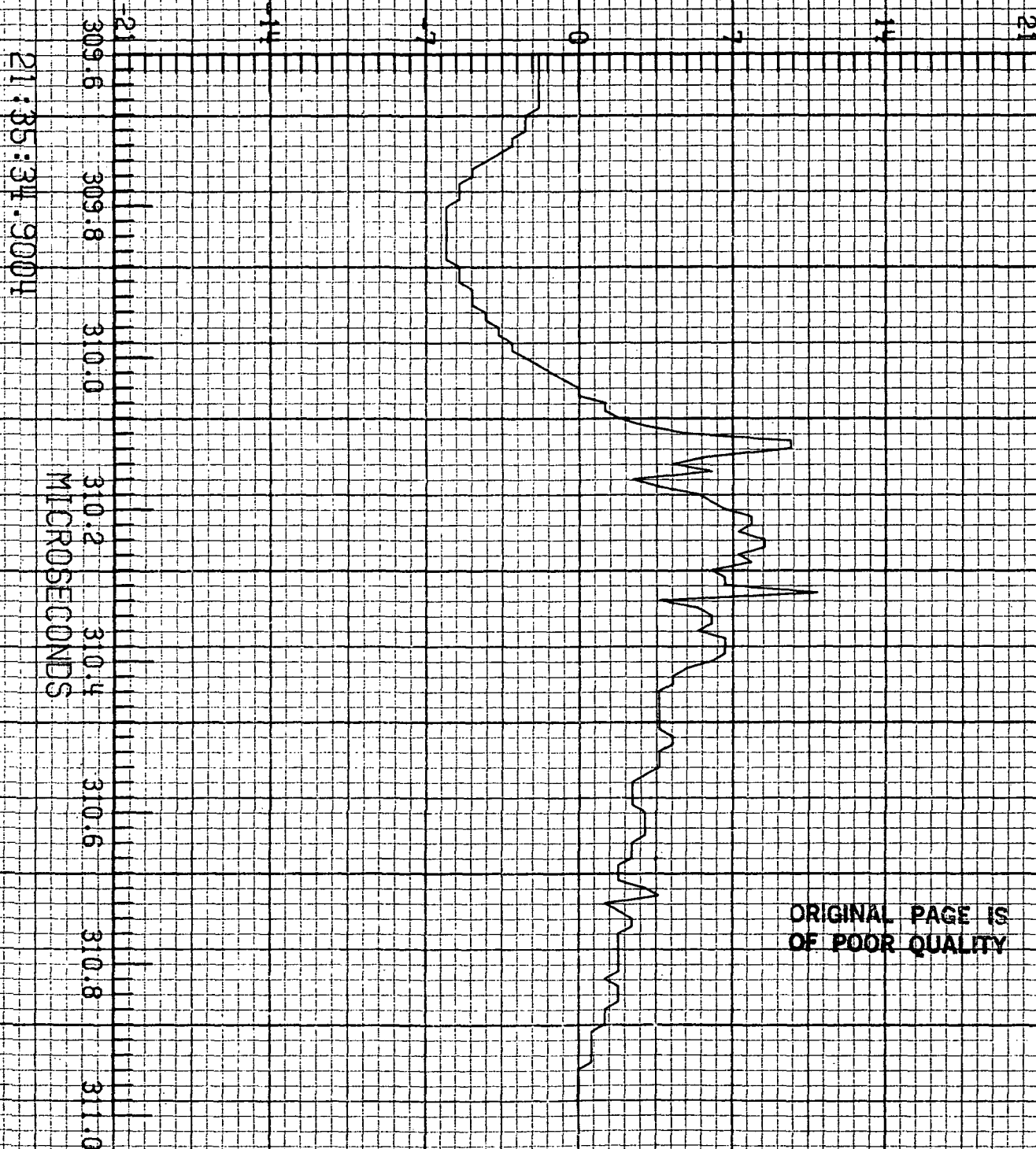
F106 LIGHTNING/TK-10/M. THOMAS

TEST NO. 83-01

RUN NO. 1

N=001

D DOT FWD  $A/m^2$



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F106 LIGHTNING/TK-8/M. THOMAS

TEST NO. 83-016

RUN NO. 1

N-001

B DOT L T/S



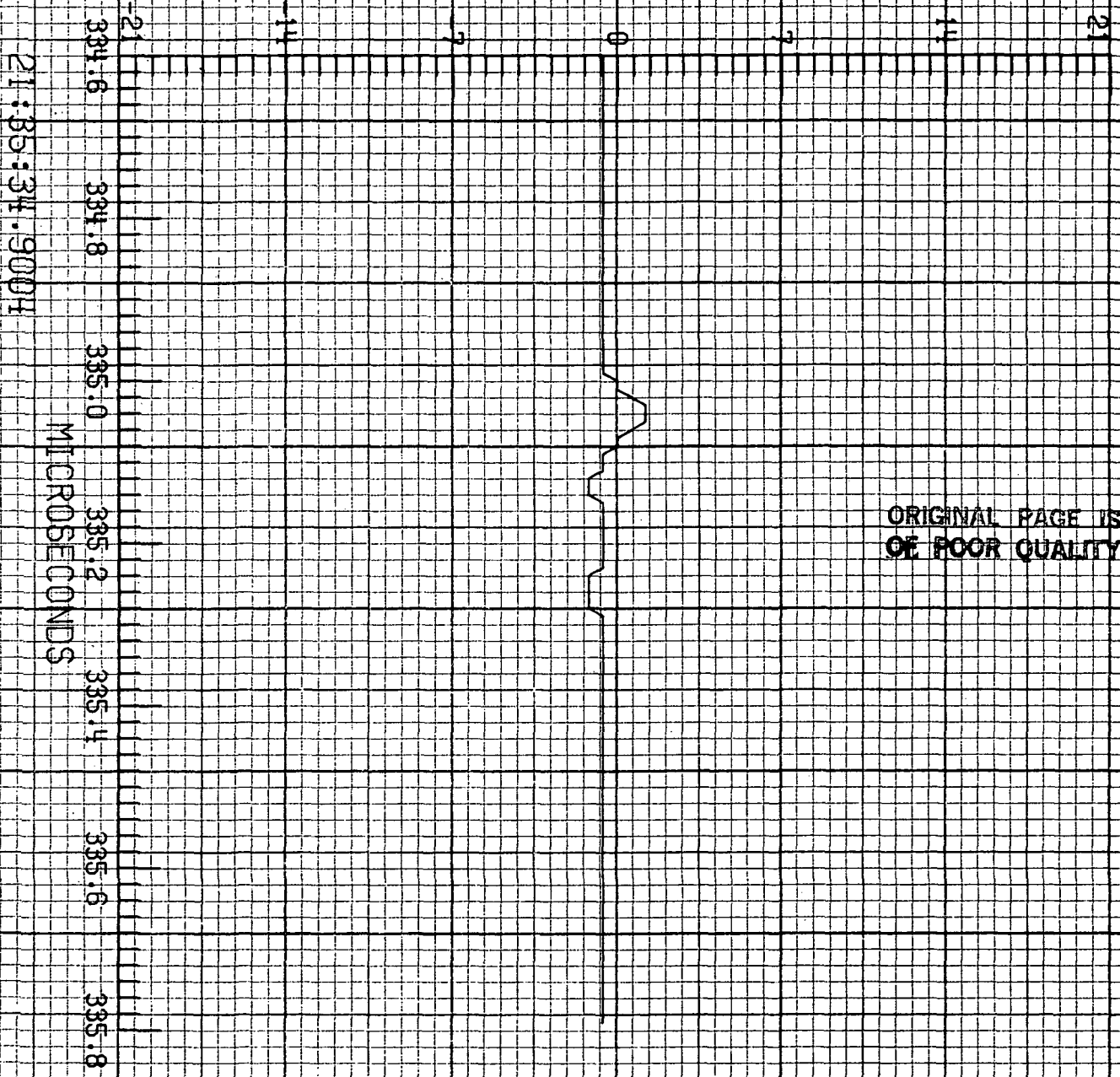
F106 LIGHTNING/TK-10/M. THOMAS

TEST NO. 83-01

RUN NO. 1

N-001

D DOT FWD  $A/m^2$



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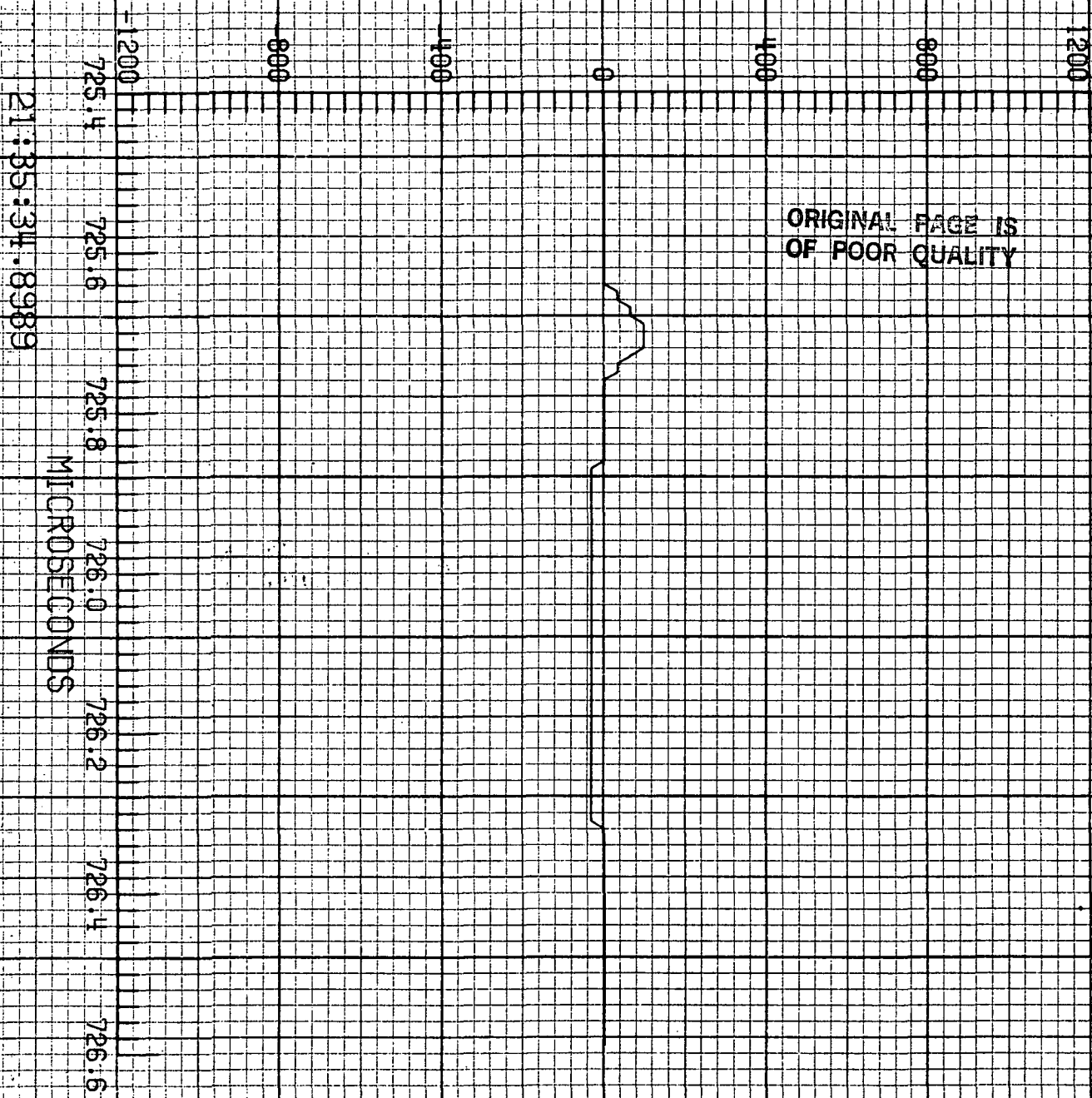
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TEST NO. 83-01

RUN NO. 1

N-001

B DOT L T/S



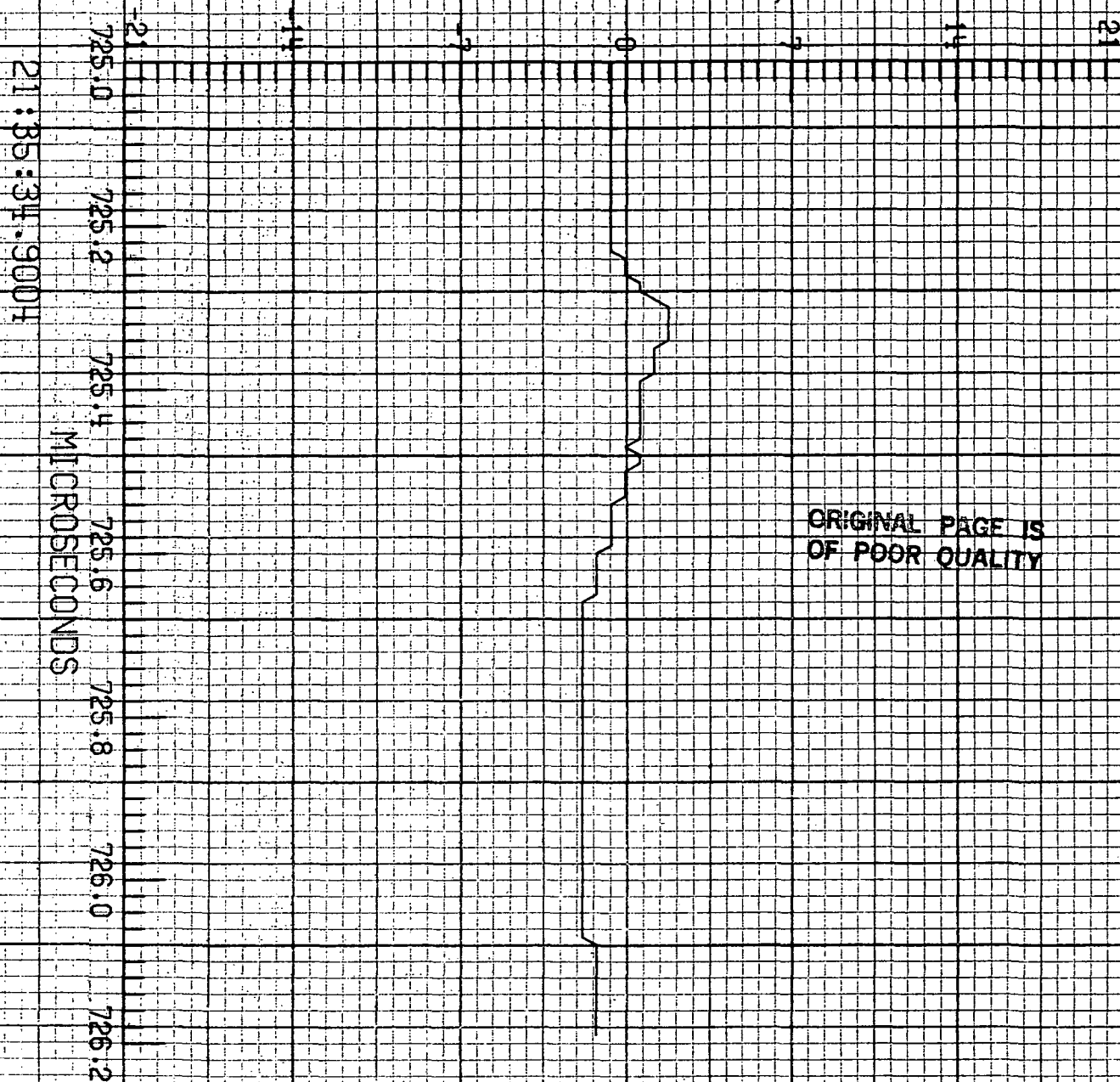
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TEST NO. 83-01

RUN NO. 1

N=001

D DOT FWD  $A/m^2$



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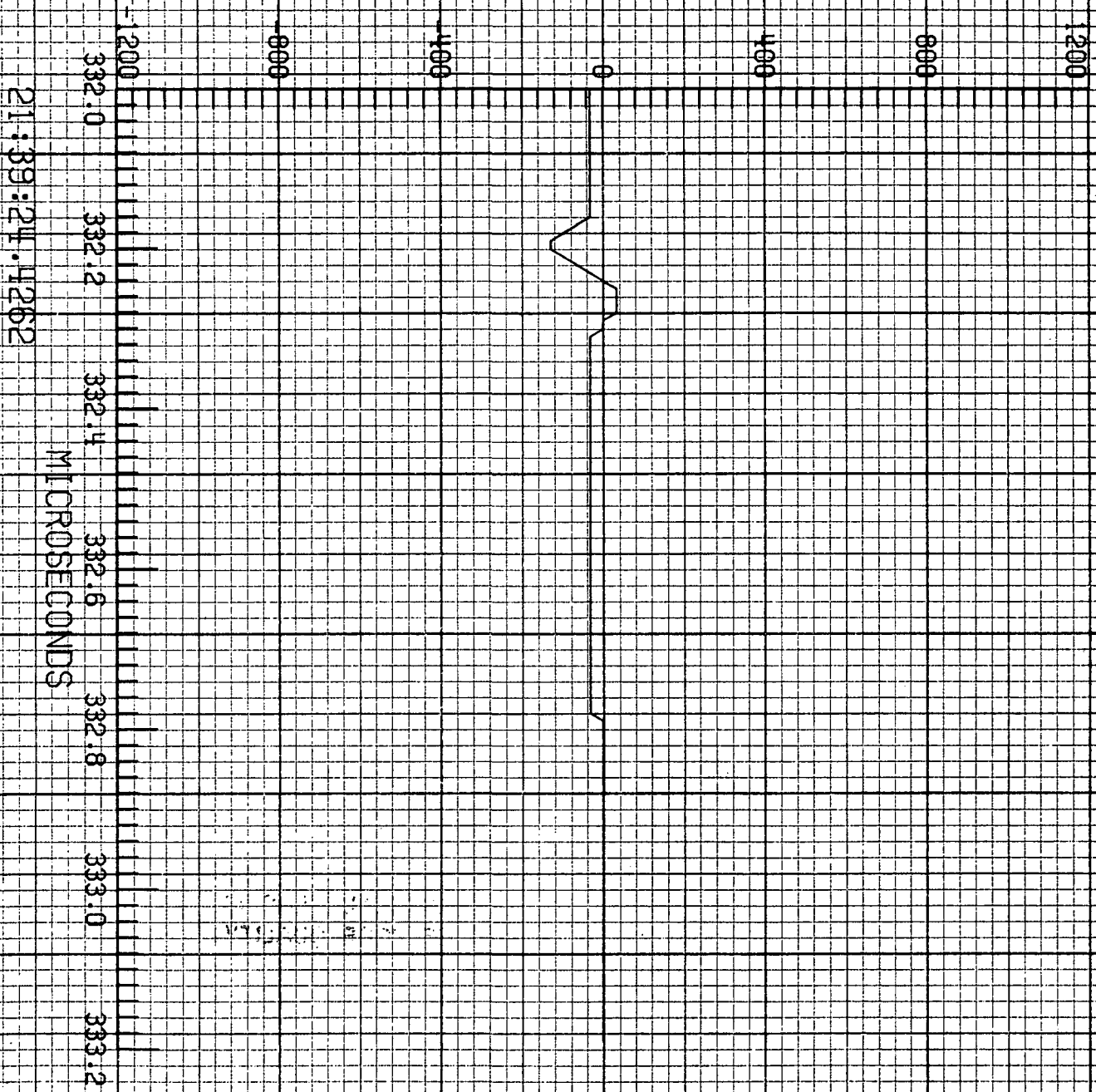
F106 LIGHTNING/TK-8/M.THOMAS

TEST NO. 83-011

RUN NO. 2

N-002

B DOT L T/S





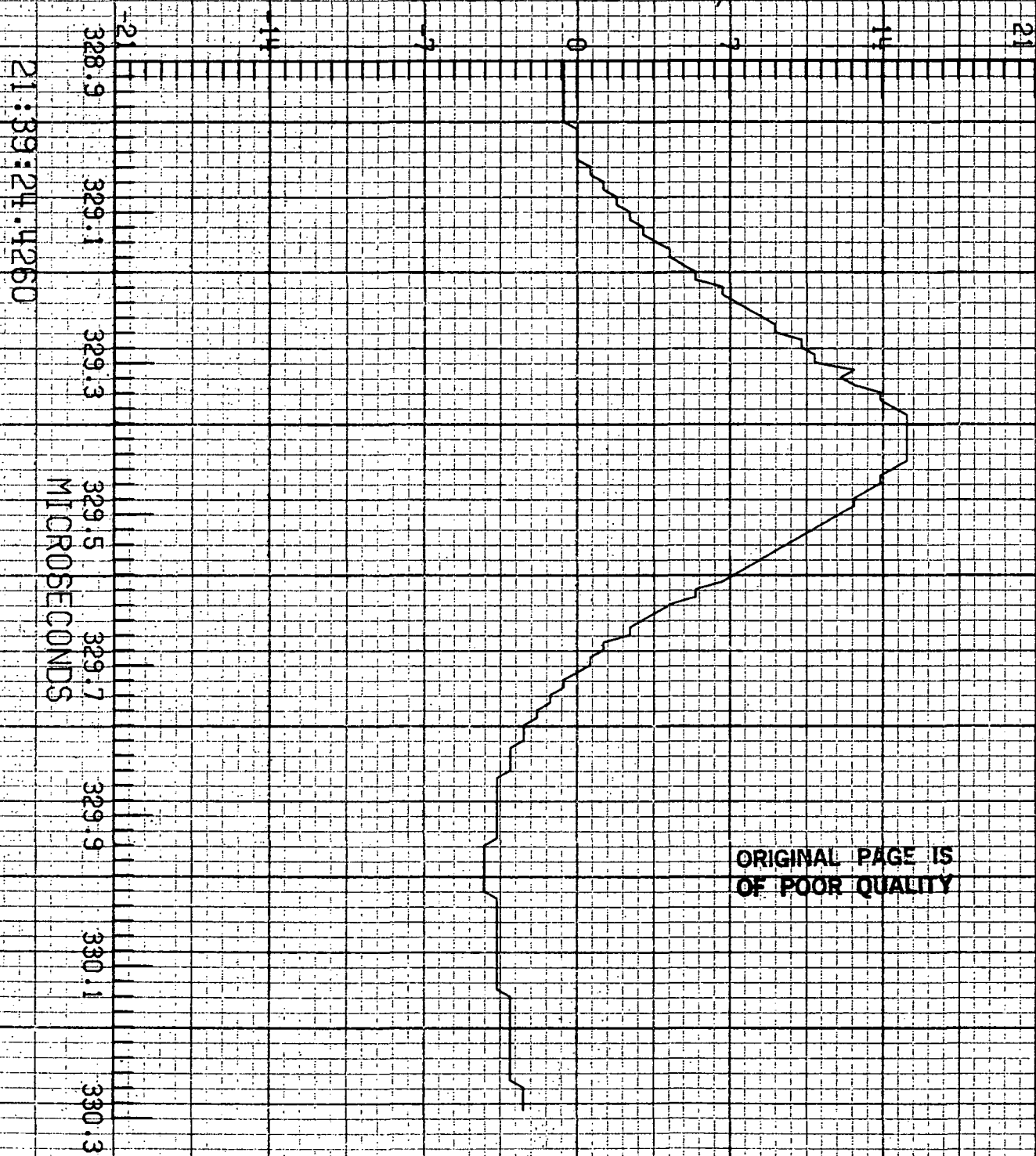
F106 LIGHTNING/TK-10/M. THOMAS

TEST NO. 83-016

RUN NO. 2

N=002

D DOT FWD  $A/m^2$

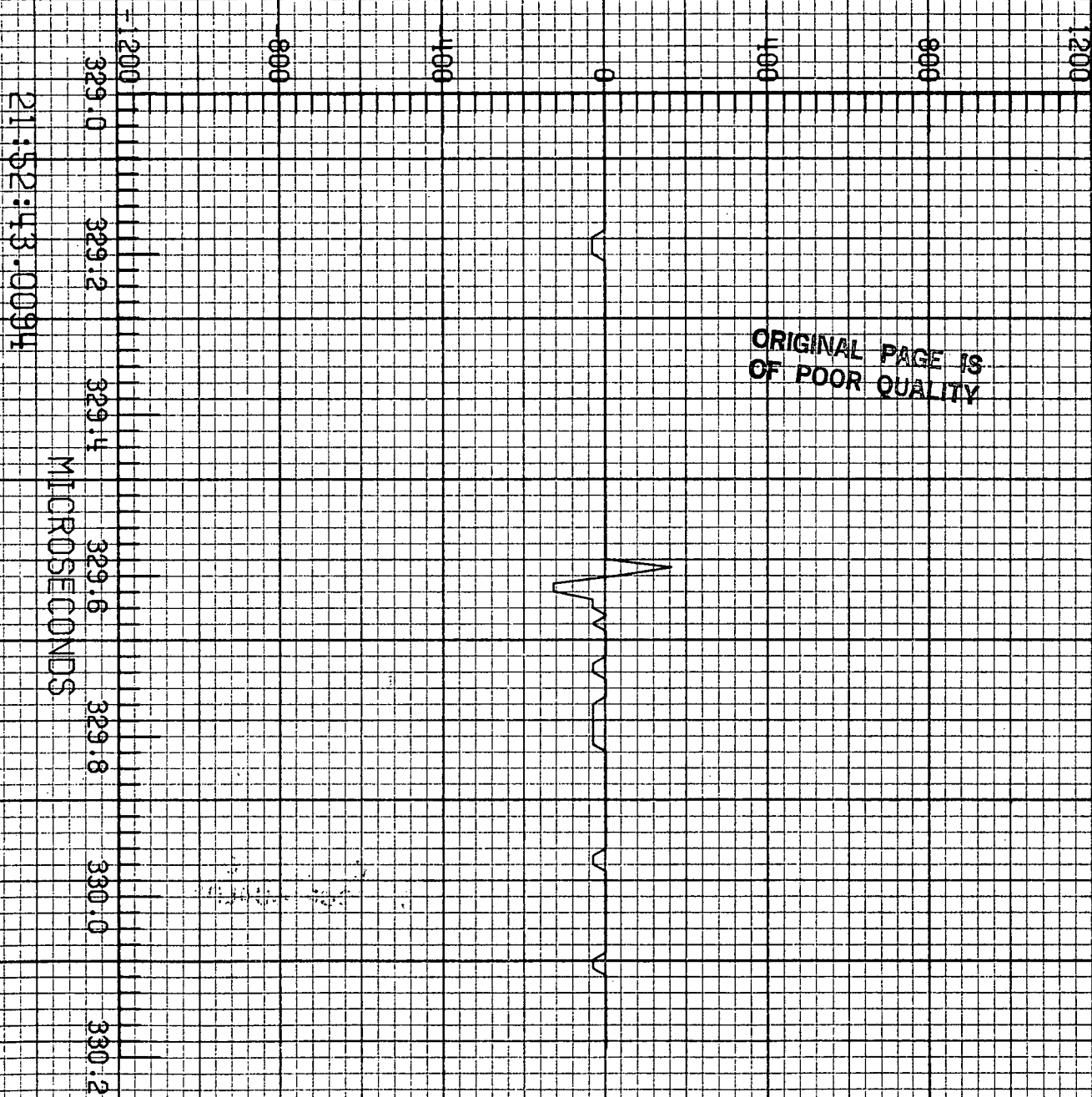


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F106 LIGHTNING/TK-8/M.THOMAS  
RUN NO. 3 N-003

TEST NO. 83-016

B DOT L T/S



F106 LIGHTNING/TK-8/M.THOMAS

TEST NO. 83-01

RUN NO. #

N-004

B DOT L T/S

-1200 -800 -400 0 400 800 1200

329.8

330.0

330.2

330.4

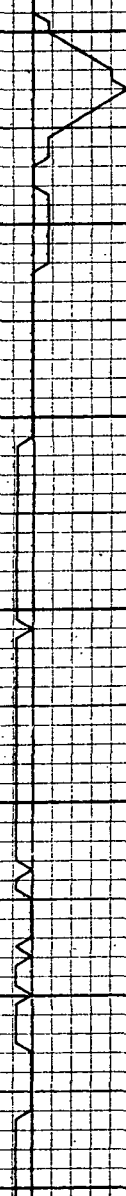
330.6

330.8

331.0

21:52:52.4232

MICROSECONDS



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F106 LIGHTNING/TK-10/M. THOMAS

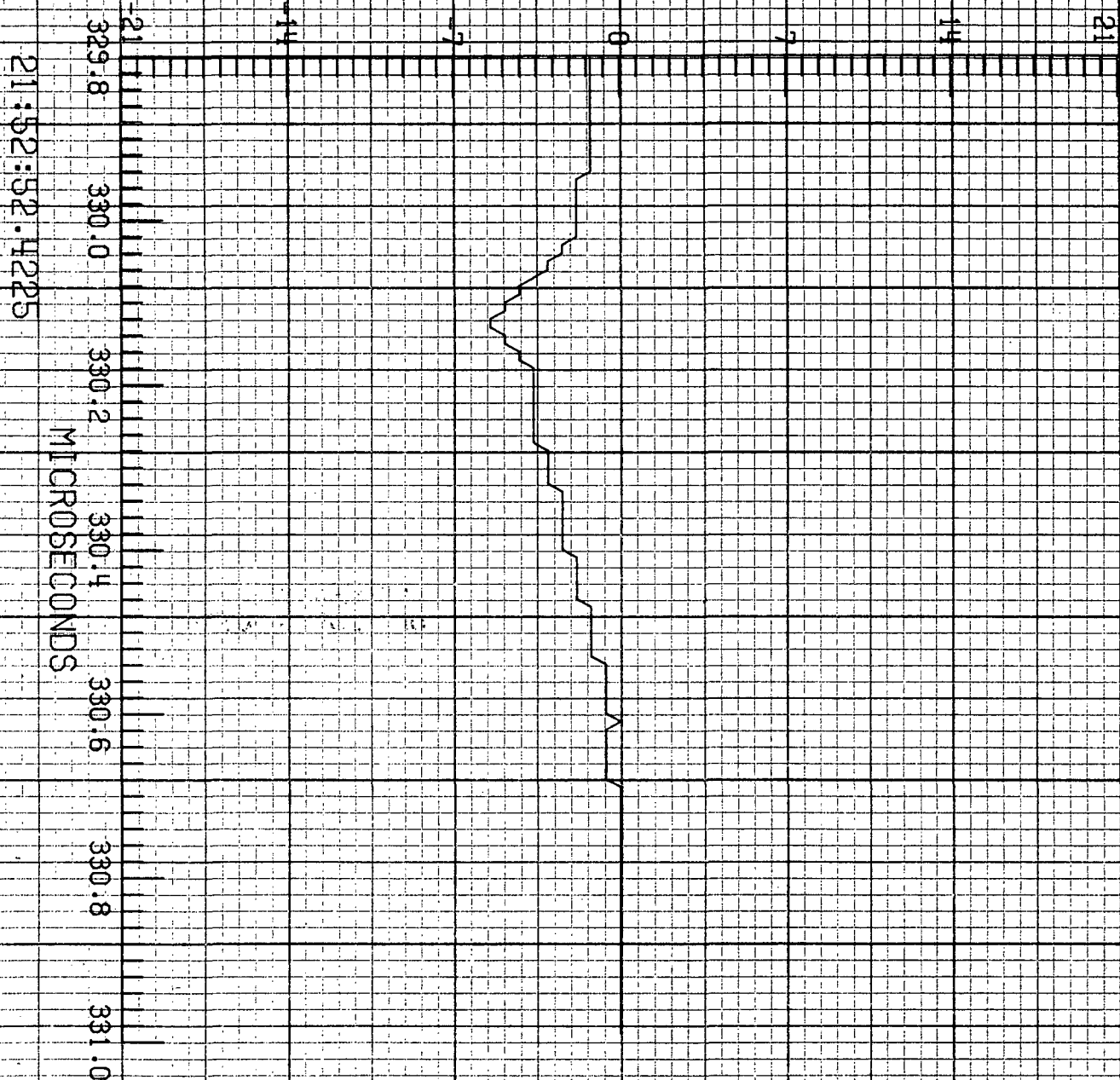
TEST NO. 83-016

RUN NO. 4

N-004

D DOT FWD

A/m<sup>2</sup>



F106 LIGHTNING/TK-8/M.THOMAS

TEST NO. 83-011

RUN NO. 4

N-004

B DOT L T/S

-1200 -800 -400 0 400 800 1200

1084.2

1084.4

1084.6

1084.8

1085.0

1085.2

1085.4

21:52:52.4232

MICROSECONDS

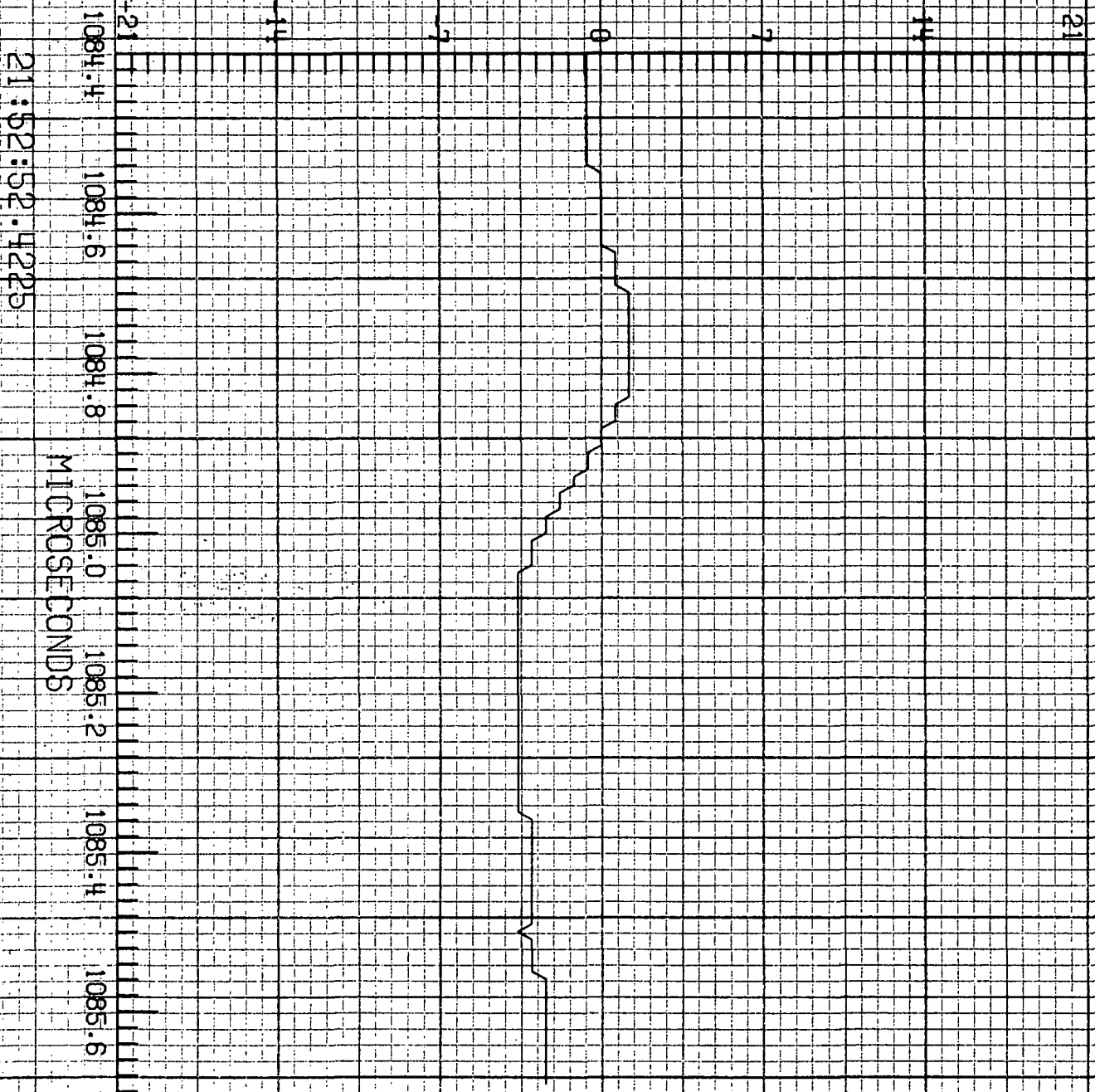
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106 LIGHTNING/TK-10/M. THOMAS  
RUN NO. 4 N-004

TEST NO. 83-01

D DOT FWD  $A/m^2$



F-106 LIGHTNING/TK.10/THOMAS

TEST NO. 83-01

RUN NO. 1

N-001

R DOT 1 T/S

-1200 -900 -600 -300 0 300 600 900 1200

21:05:16.0502

306.8

307.0

307.2

307.4

307.6

307.8

308.0

308.2

MICROSECONDS

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F-106 LIGHTNING/FK.10/THOMAS

TEST NO. 83-01

RUN NO. 1

N-001

B DOT I T/S

-1200 -800 -400 0 400 800 1200

21:05:16.0502

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MICROSECONDS

337.0 337.2 337.4 337.6 337.8 338.0 338.2 338.4



F-106 LIGHTNING/TK.10/THOMAS

TEST NO. 83-01

RUN NO. 2

N-002

B DOT L T/S

1200  
800  
400  
0  
-400  
-800  
-1200

329.5  
329.7  
329.9  
330.1  
330.3  
330.5  
330.7  
330.9

21:30:14.3322

MICROSECONDS

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650

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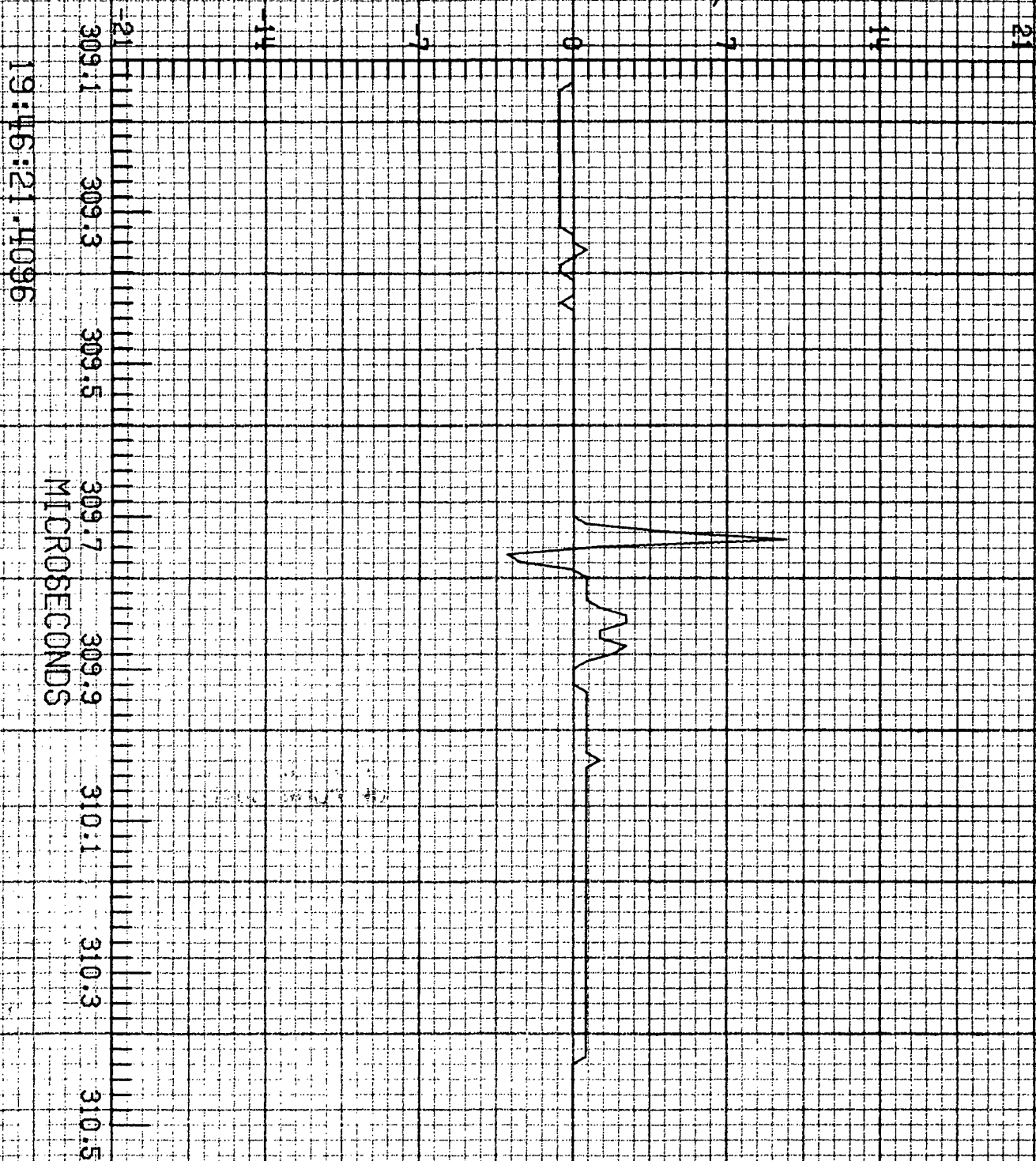
F-106 LIGHTNING/TK.8/THOMAS

TEST NO. 83-021

RUN NO. 1

S-001

D DOT FWD  $A/m^2$



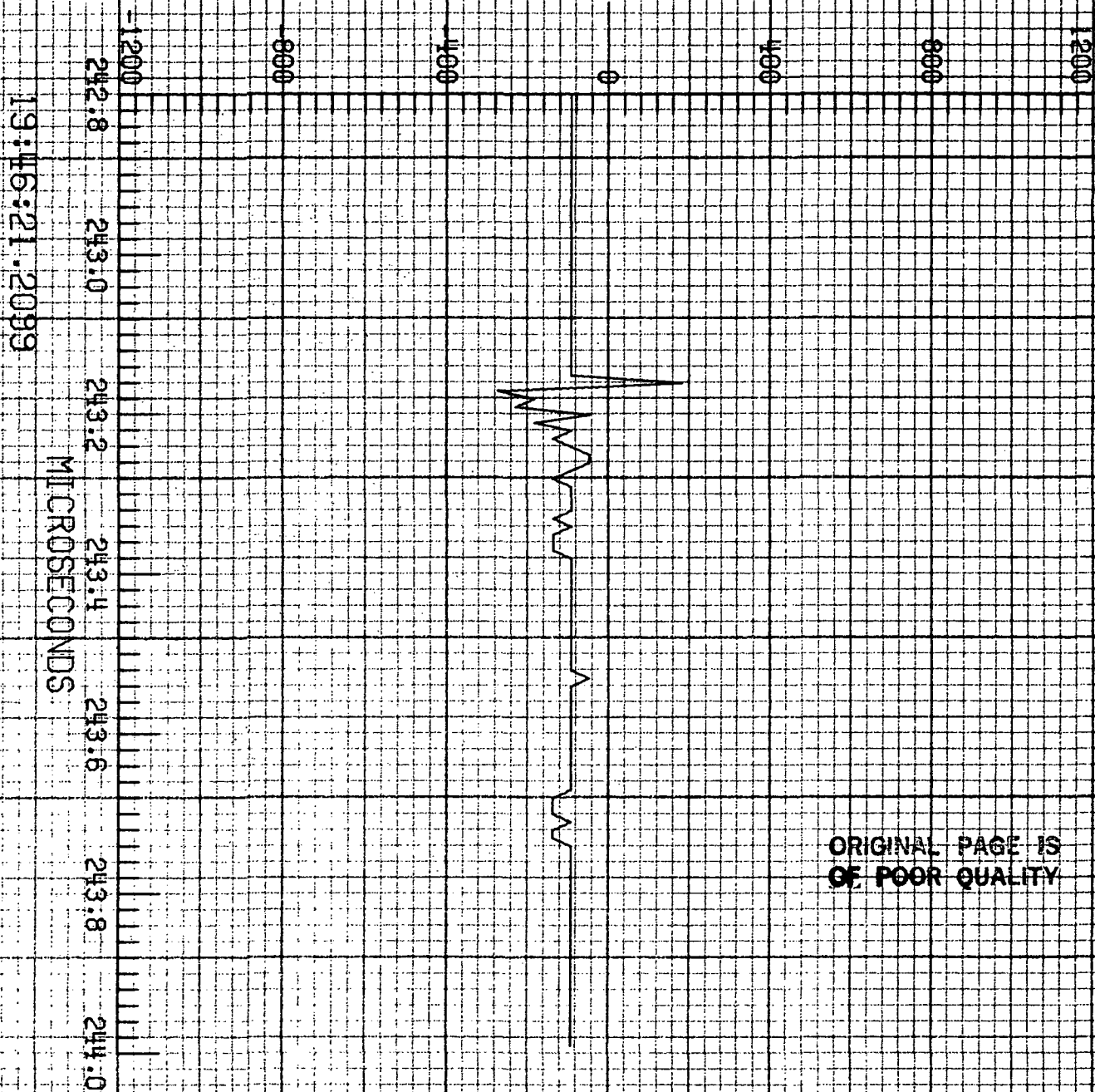
F-106 LIGHTNING/TK.10/THOMAS

TEST NO. 88-02

RUN NO. 1

S-001

B DOT L T/S



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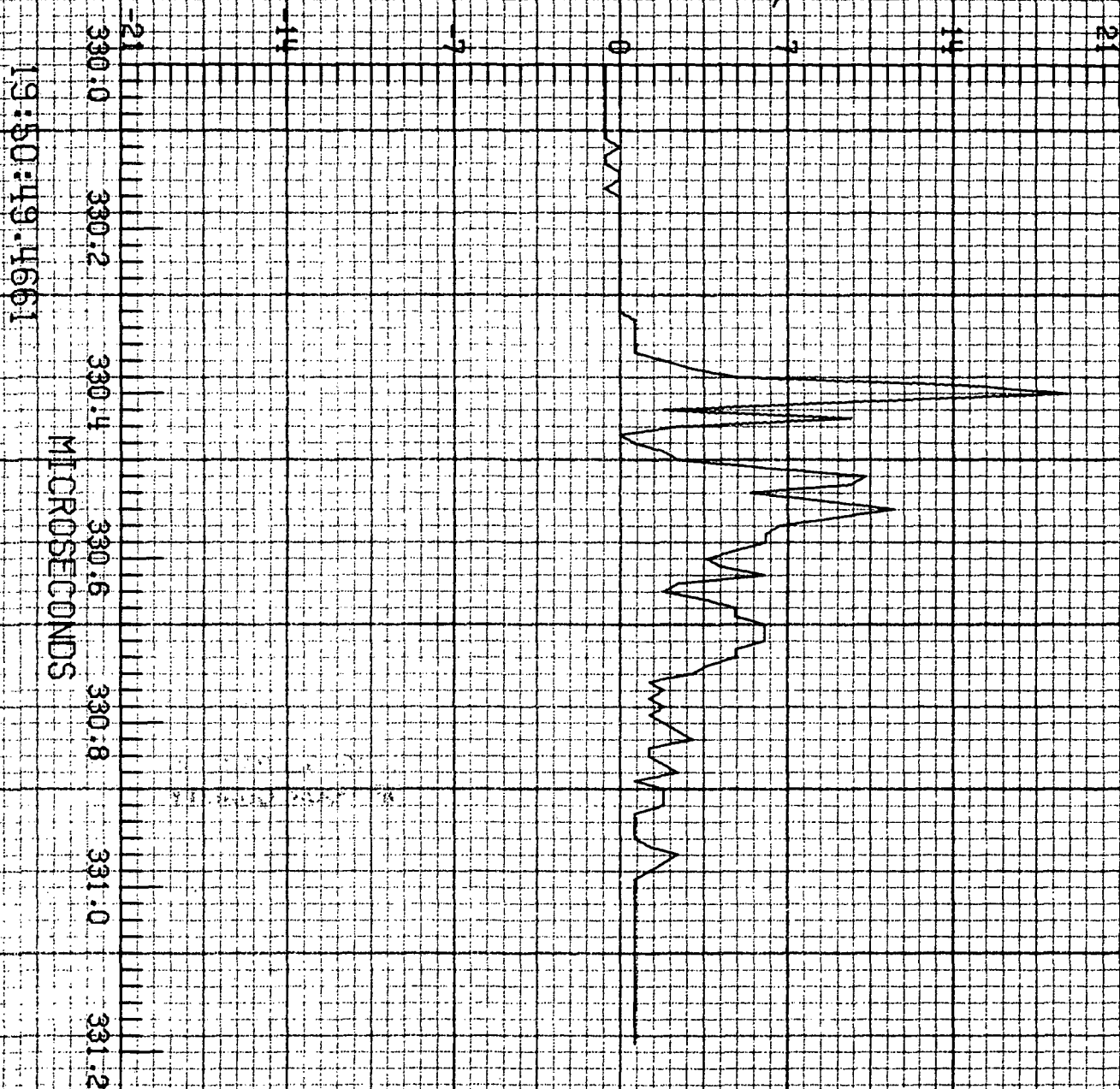
F-106 LIGHTNING/TK.8/THOMAS

TEST NO. 83-02

RUN NO. 2

S-002

D DOT FWD  $A/m^2$

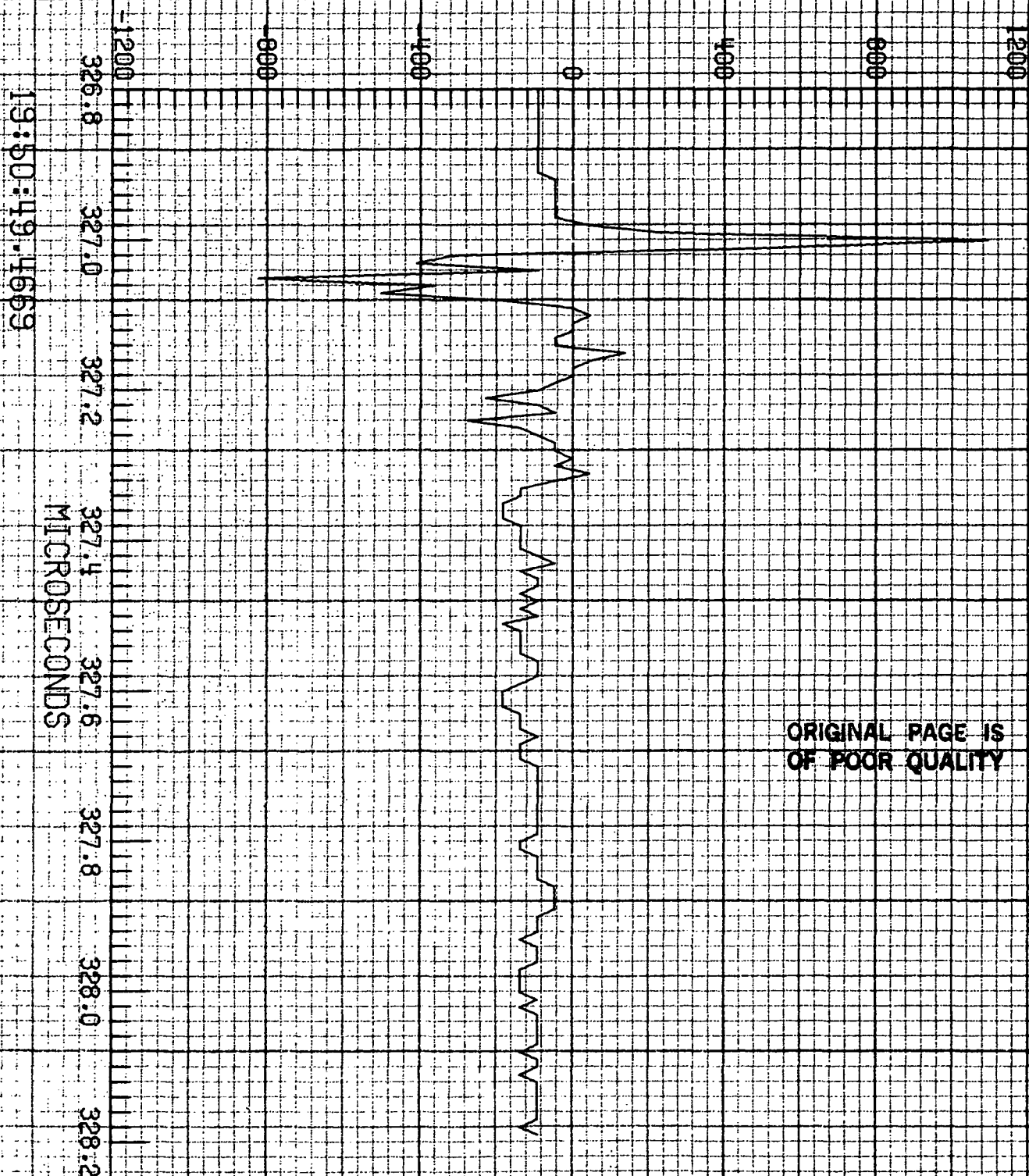


F-106 LIGHTNING/TK.1D/THOMAS  
RUN NO. 2

S-002

TEST NO. 83-02

B DOT L T/S



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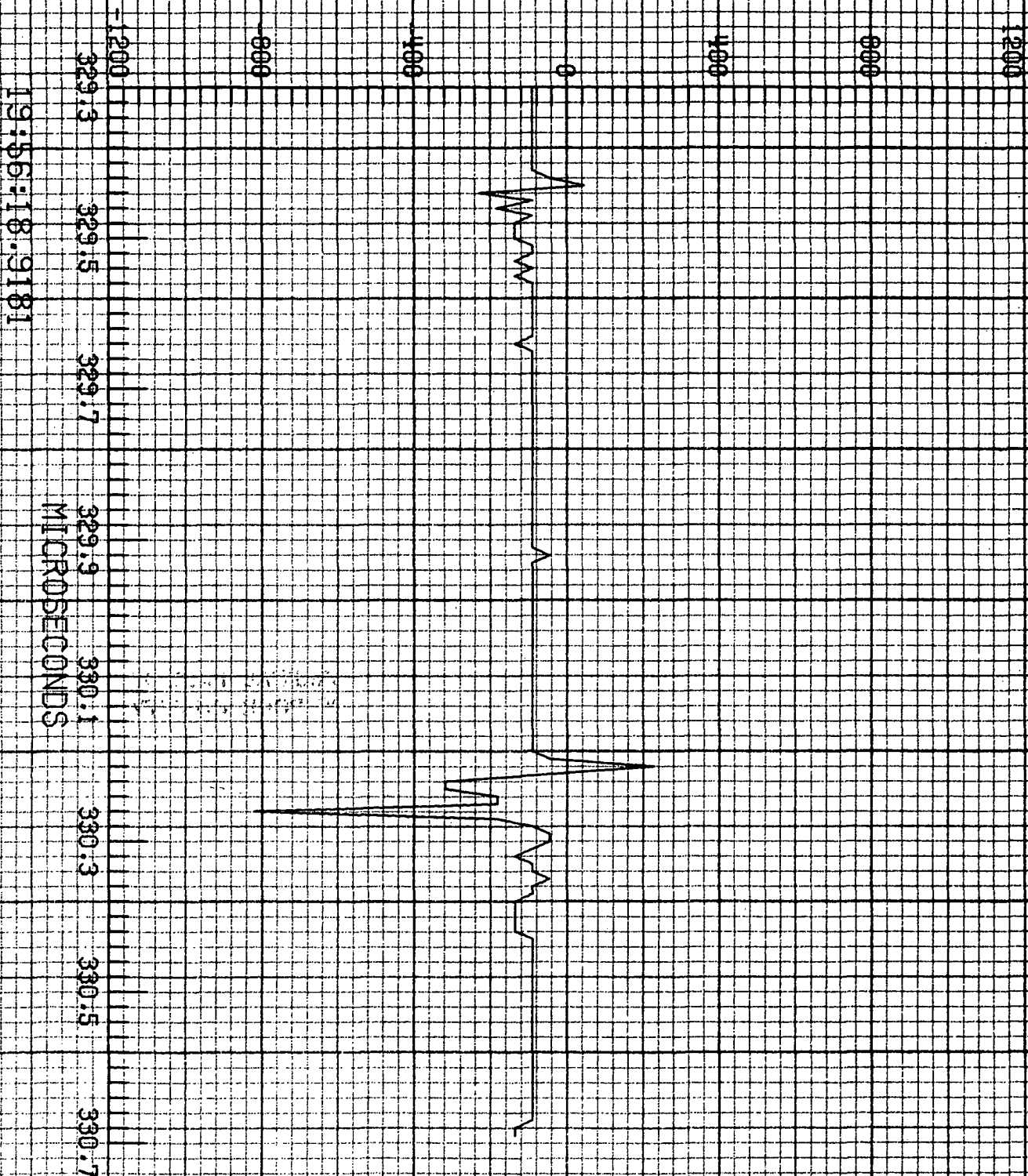
F-106 LIGHTNING/TK.10/THOMAS

TEST NO. 83-02

RUN NO. 3

N=001

B DOT L T/5



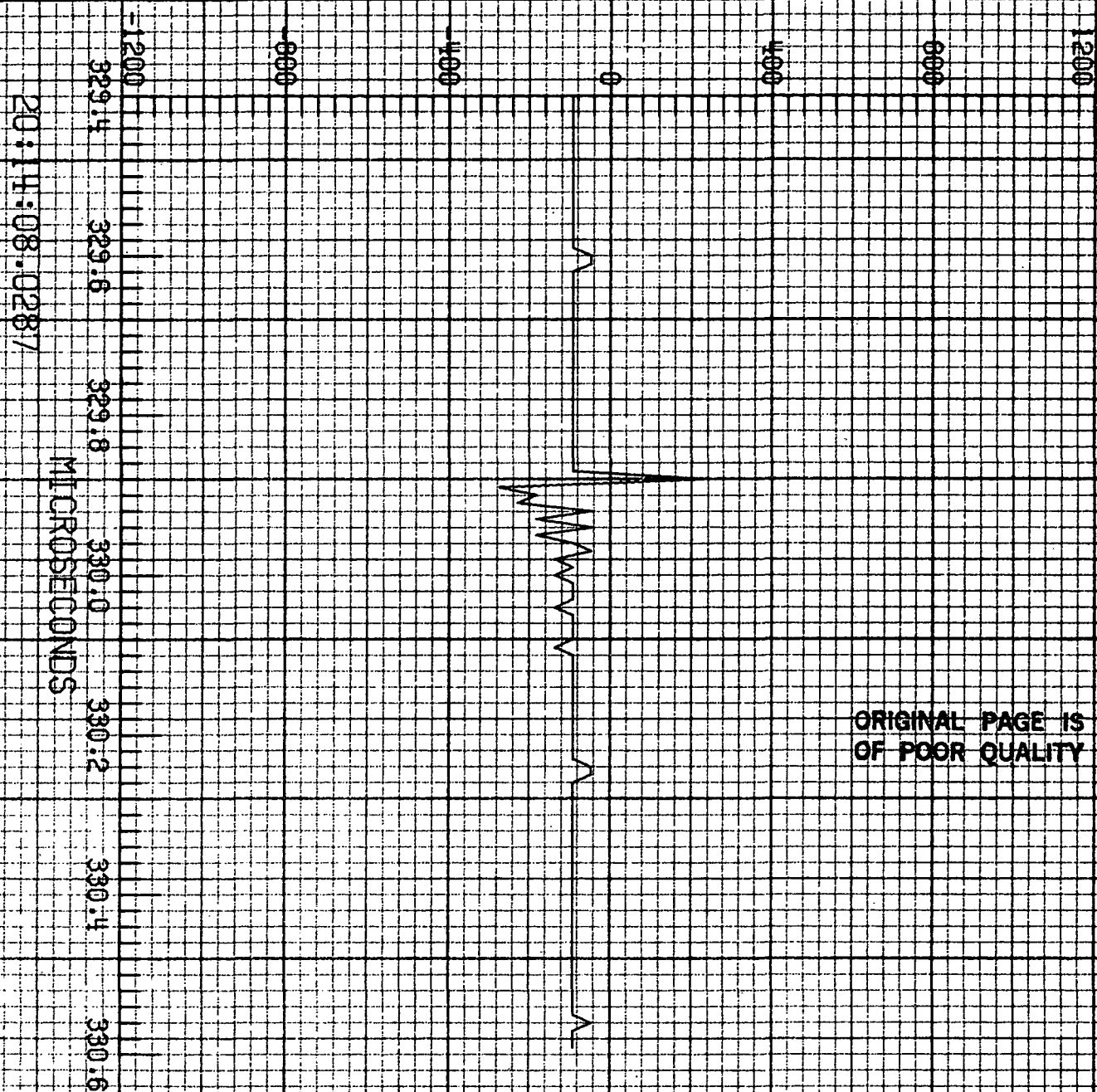
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TEST NO. 83-02

RUN NO. 4

N=002

B DOT I T/S





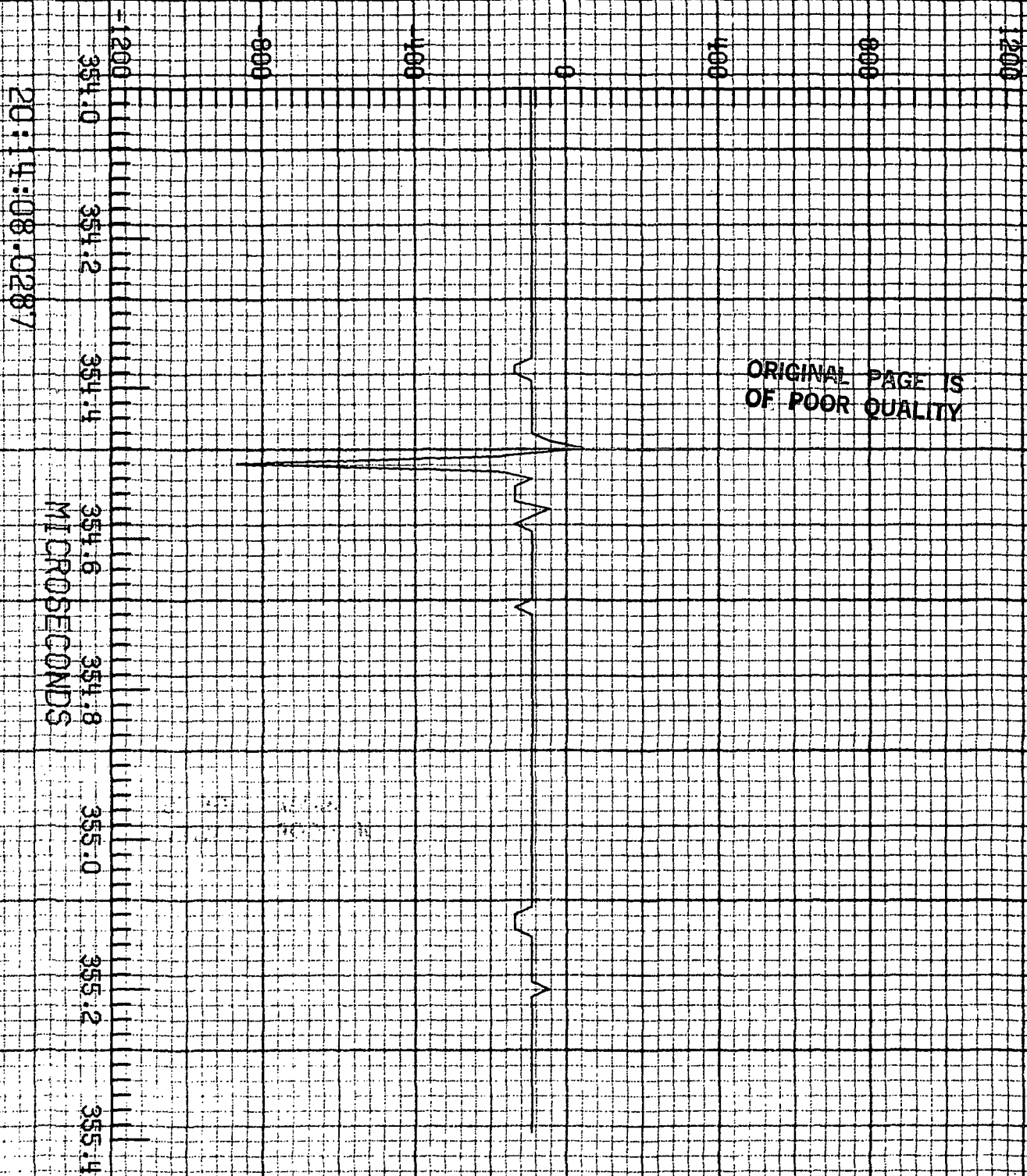
F-106 LIGHTNING/TK.10/THOMAS

TEST NO. 83-02

RUN NO. 1

N-002

B DOT II T/S



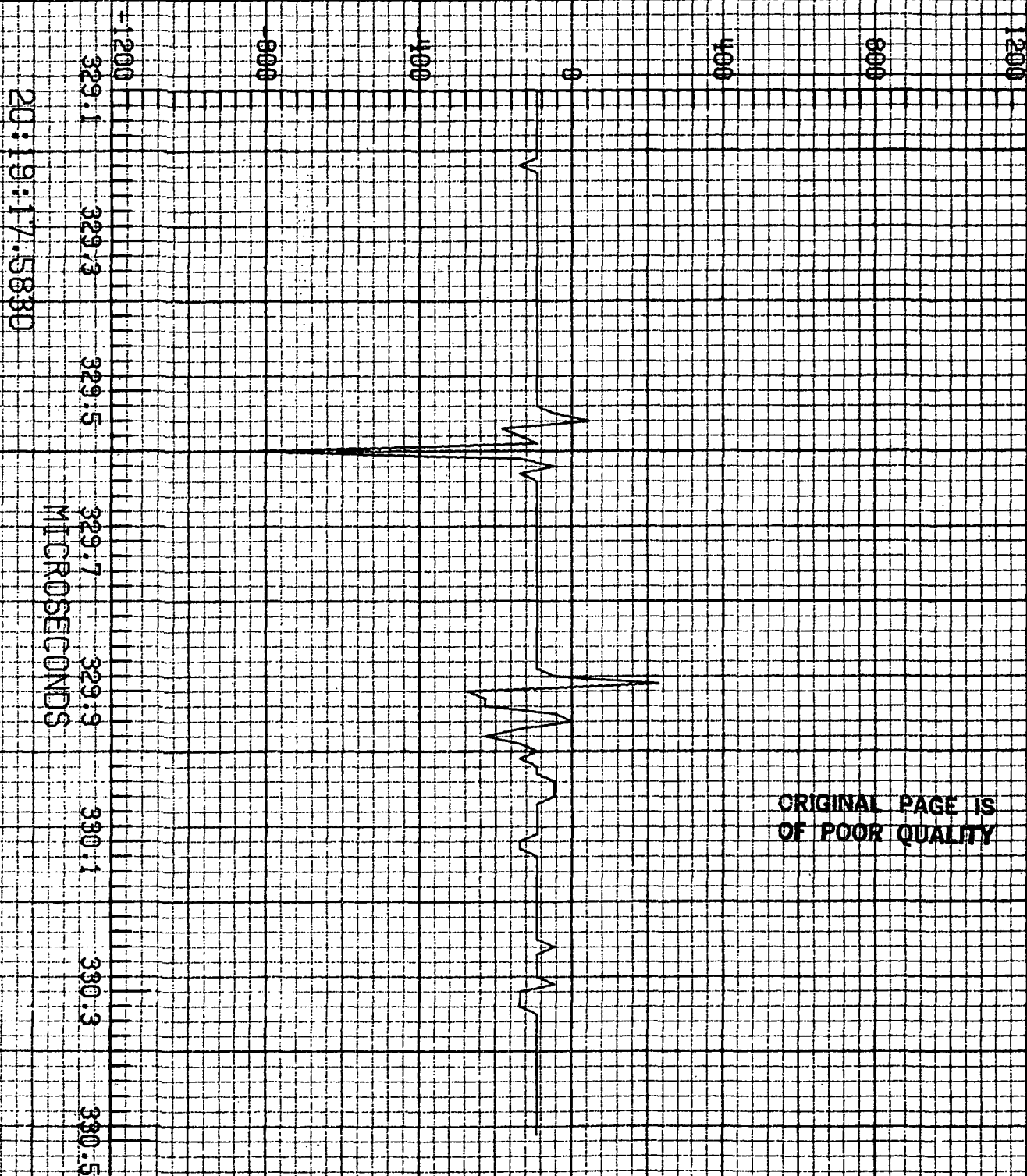
F-106 LIGHTNING/TK.10/THOMAS

TEST NO. 83-02

RUN NO. 5

S-003

B DOT L T/S



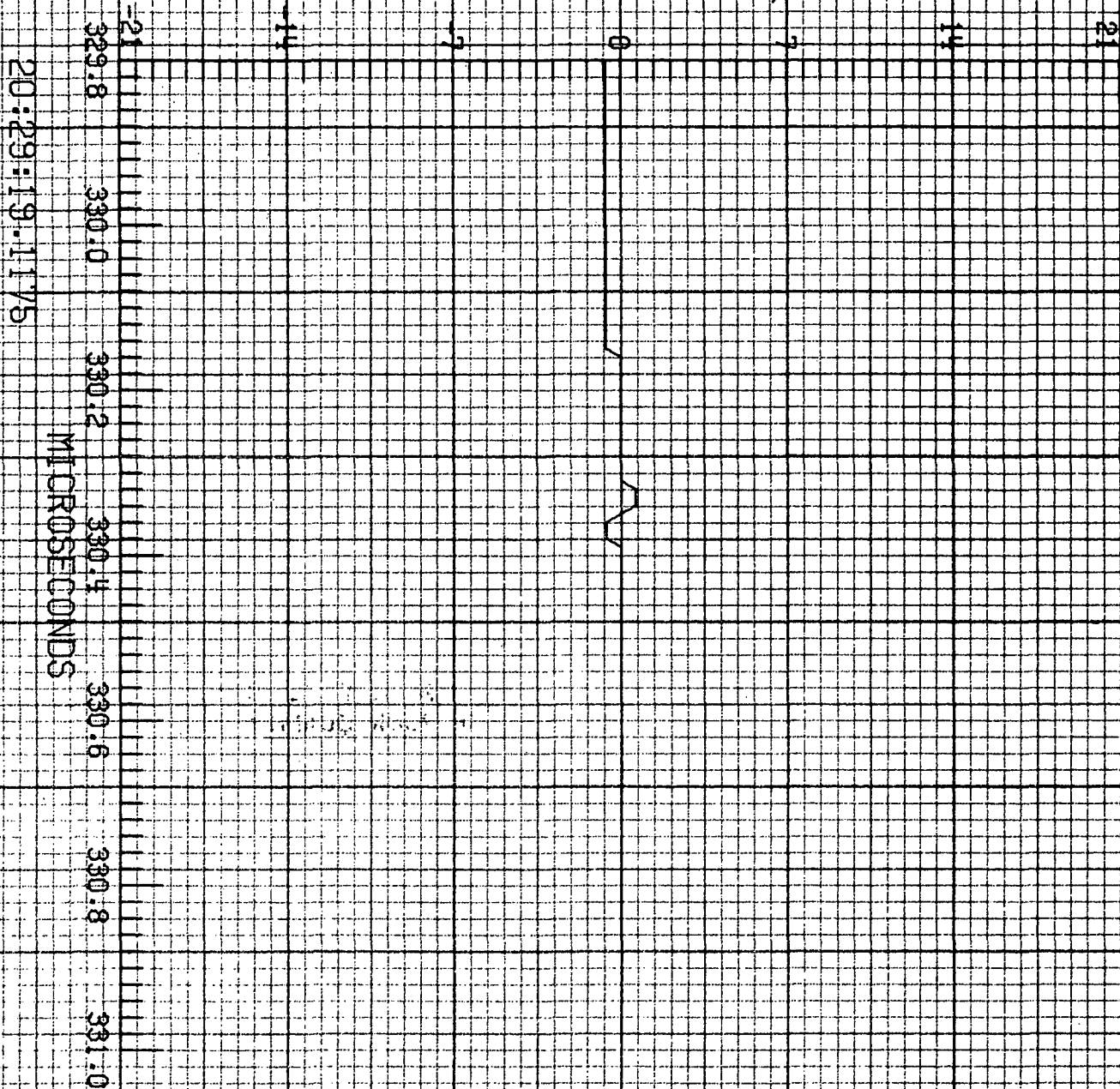
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F-106 LIGHTNING/TK.8/THOMAS  
RUN NO. 5 N-003

TEST NO. 83-026

D DOT FWD A/m<sup>2</sup>



F-106 LIGHTNING/TK.10/THOMAS

TEST NO. 83-02

RUN NO. 5

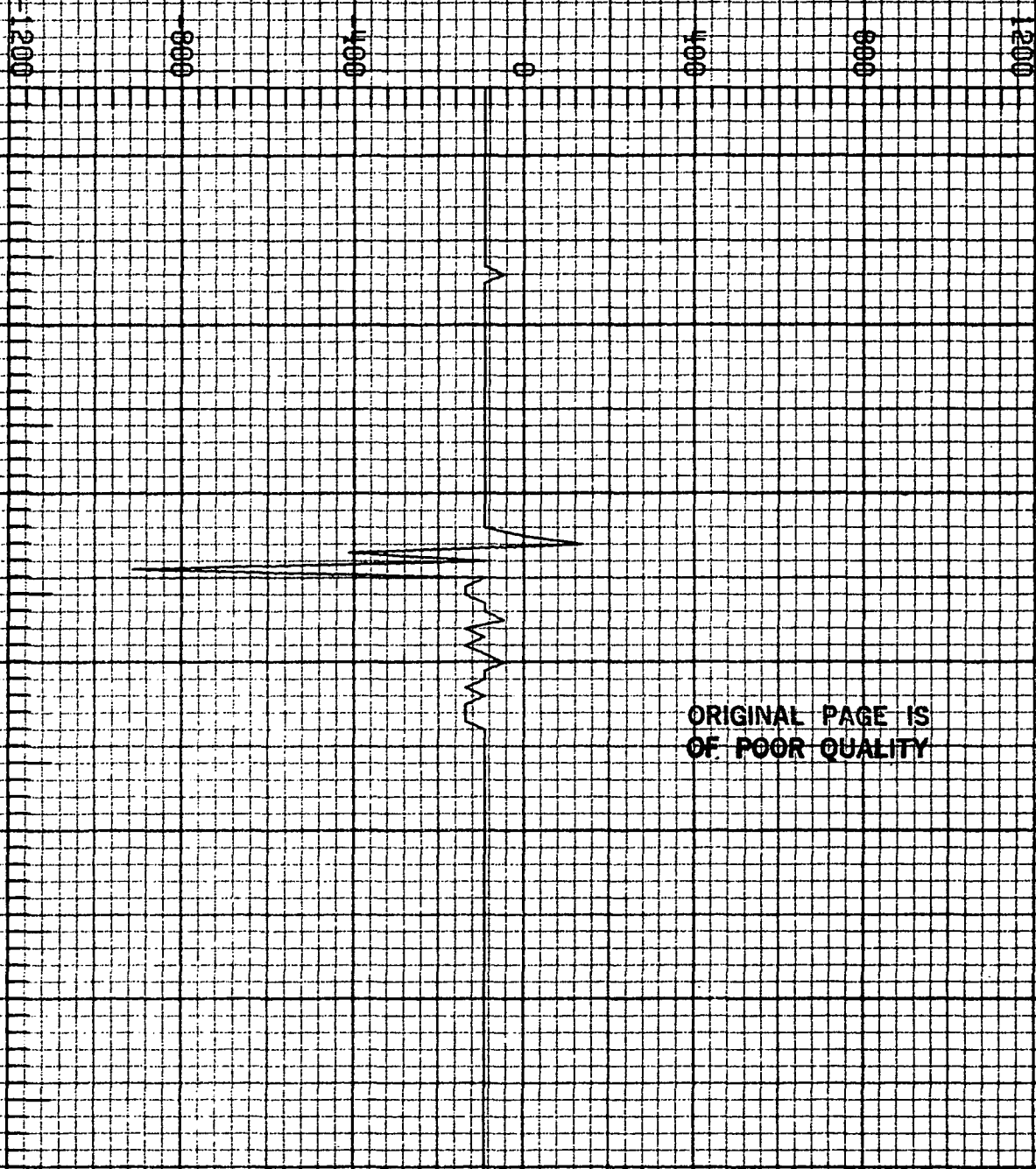
N=003

B DOT L T/5

20:29:18.9150

MICROSECONDS

329.7 329.9 330.1 330.3 330.5 330.7 330.9



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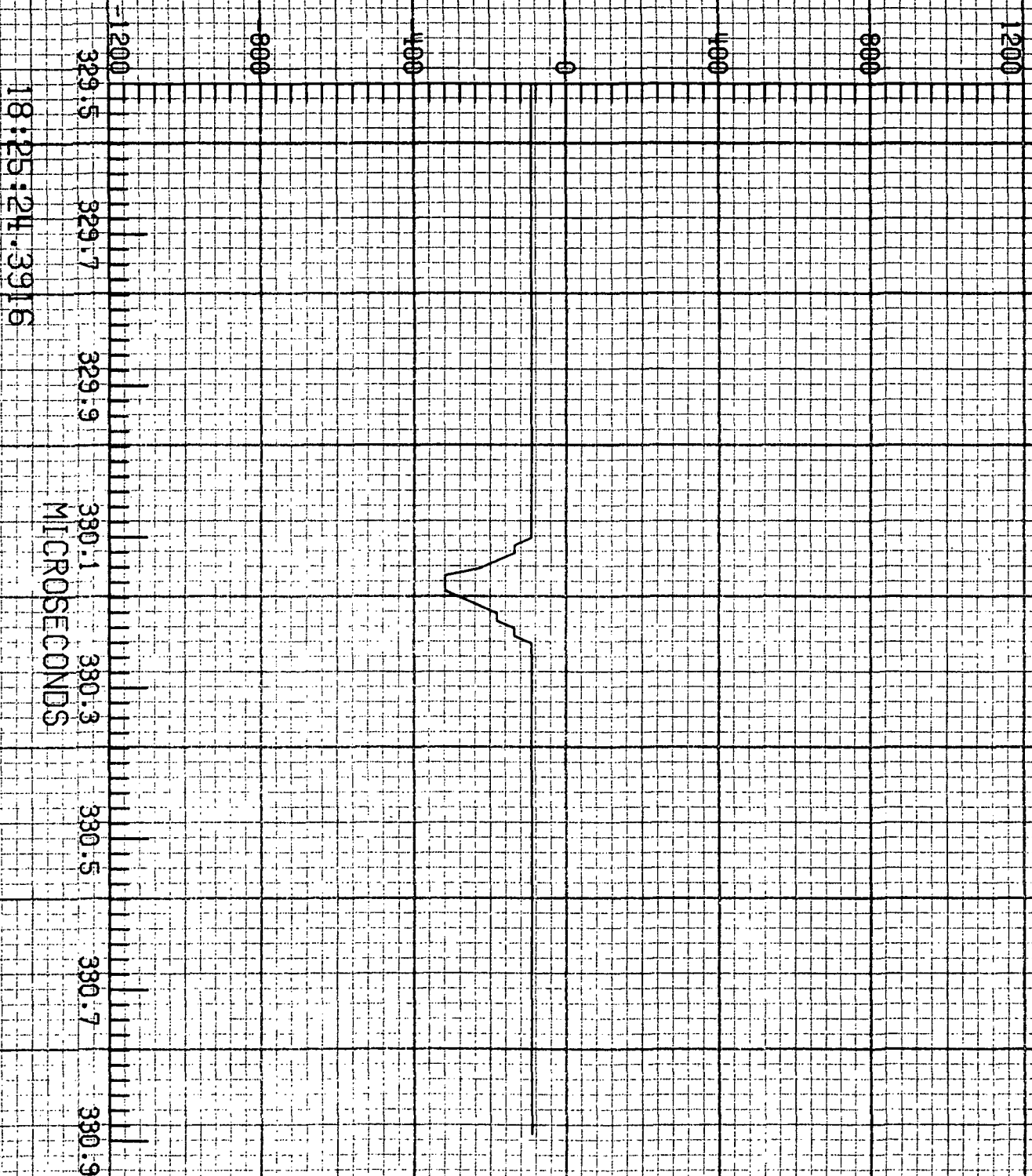
F106 LIGHTNING/TK.10/M.THOMAS

TEST NO. 83-02

RUN NO. 2

S-002

B DOT II T/S



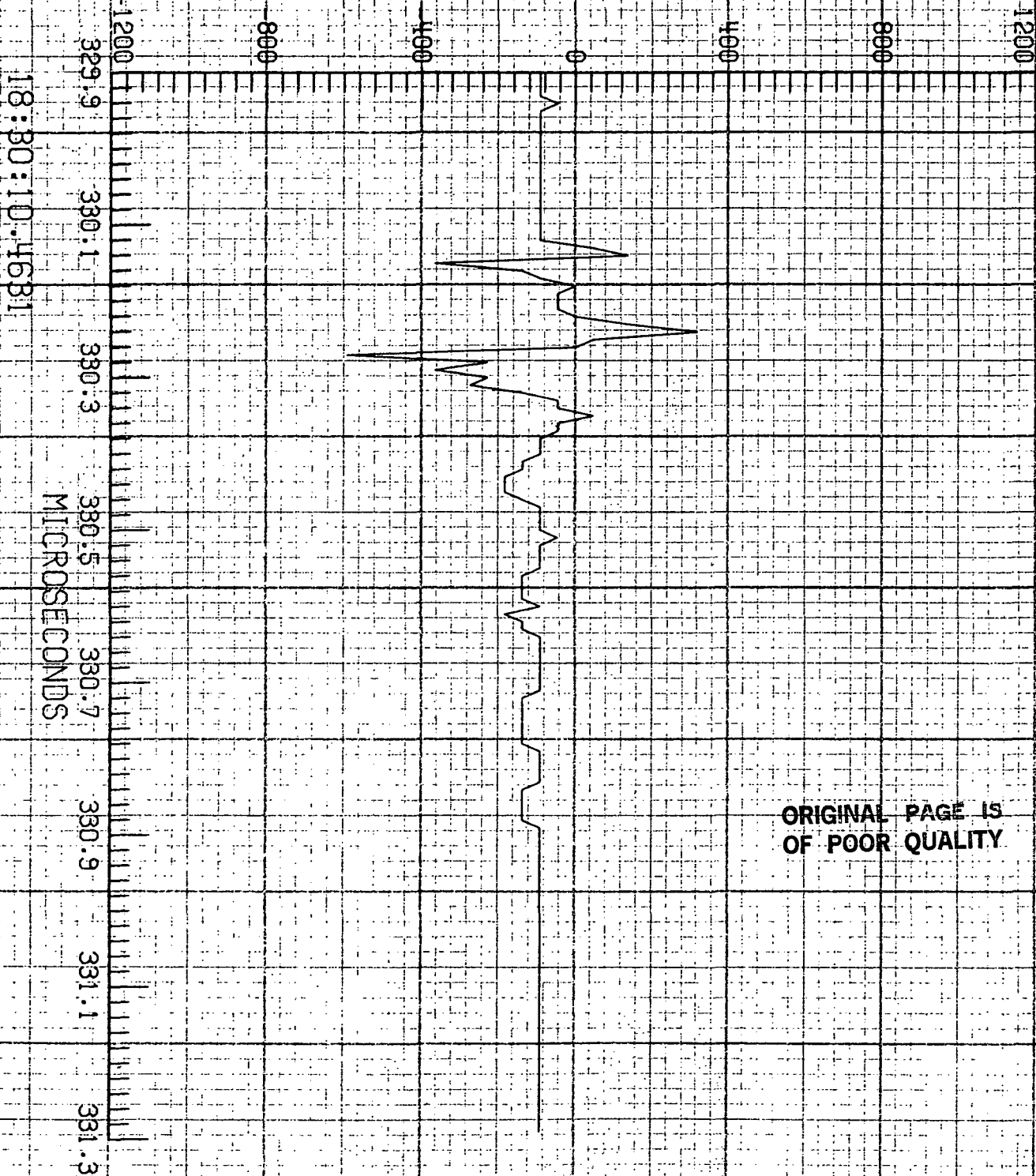
106 LIGHTNING/TK.10/M.THOMAS

TEST NO. 83-02

RUN NO. 3

S-003

B DOT L T/S



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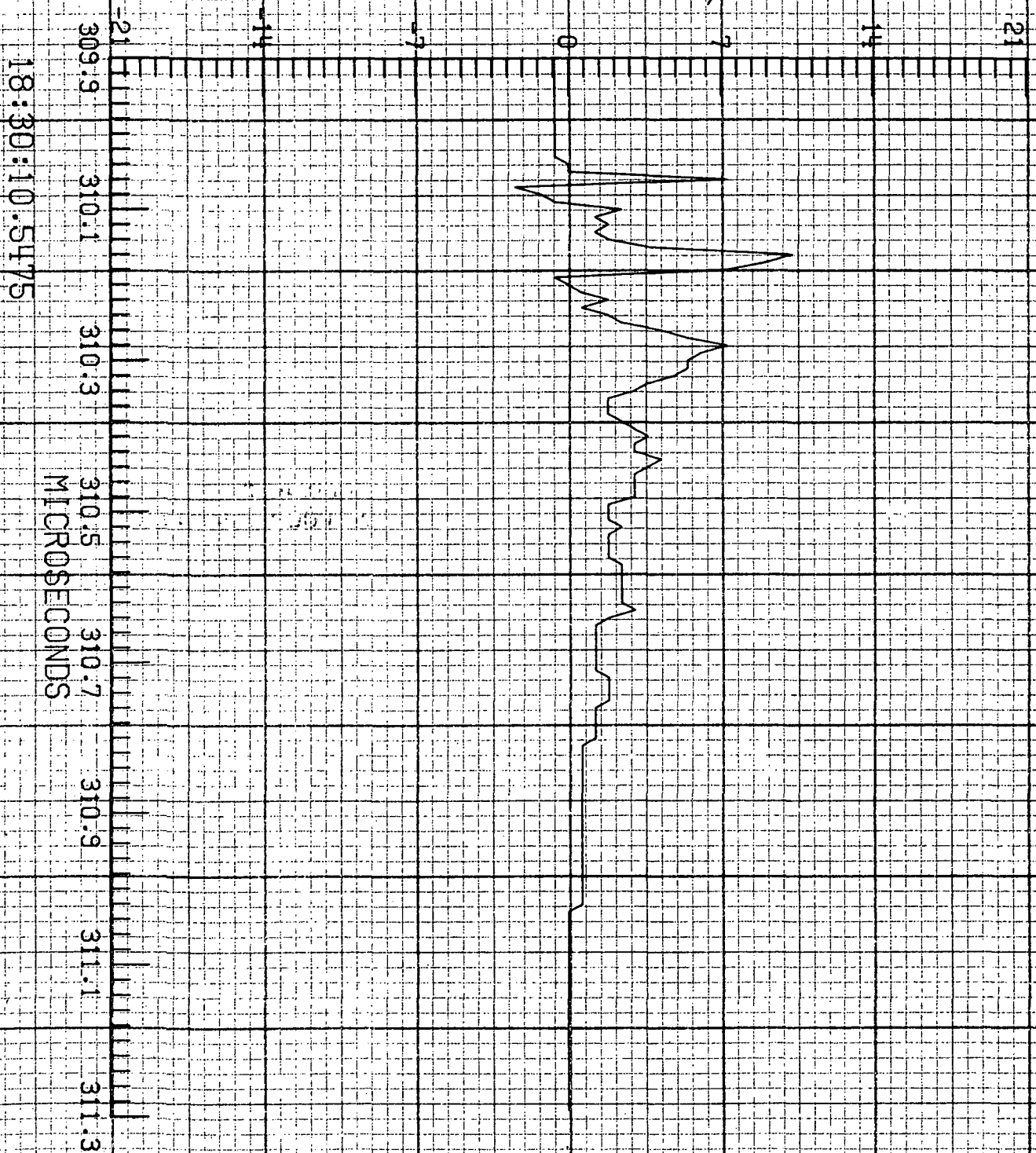
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TEST NO. 83-021

RUN NO. 3

S-003

D DOT FWD  $A/m^2$



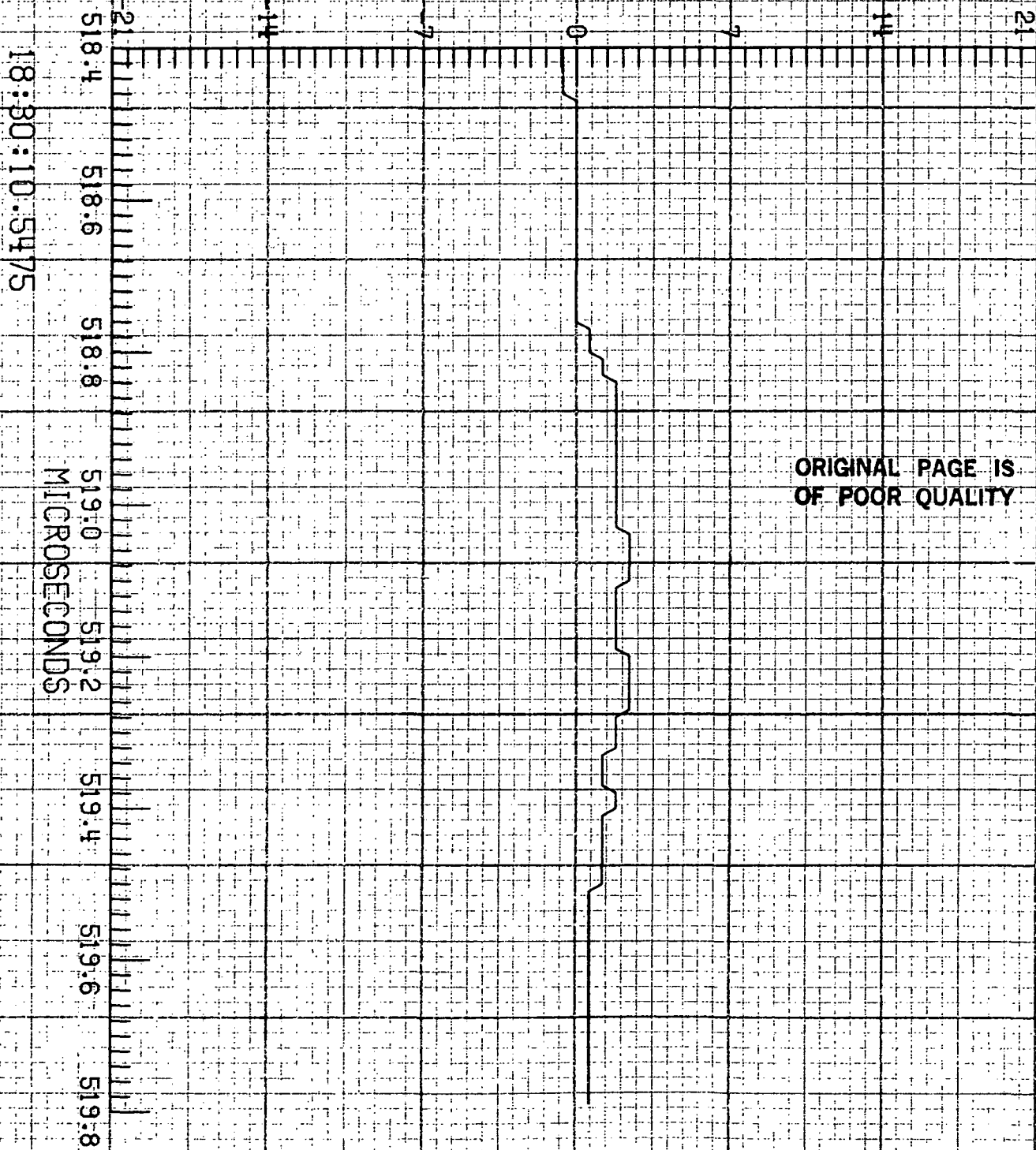
F106 LIGHTNING/TK.8/M.THOMAS  
RUN NO. 8

S-003

TEST NO. 83-02

D DOT FWD

A/m<sup>2</sup>



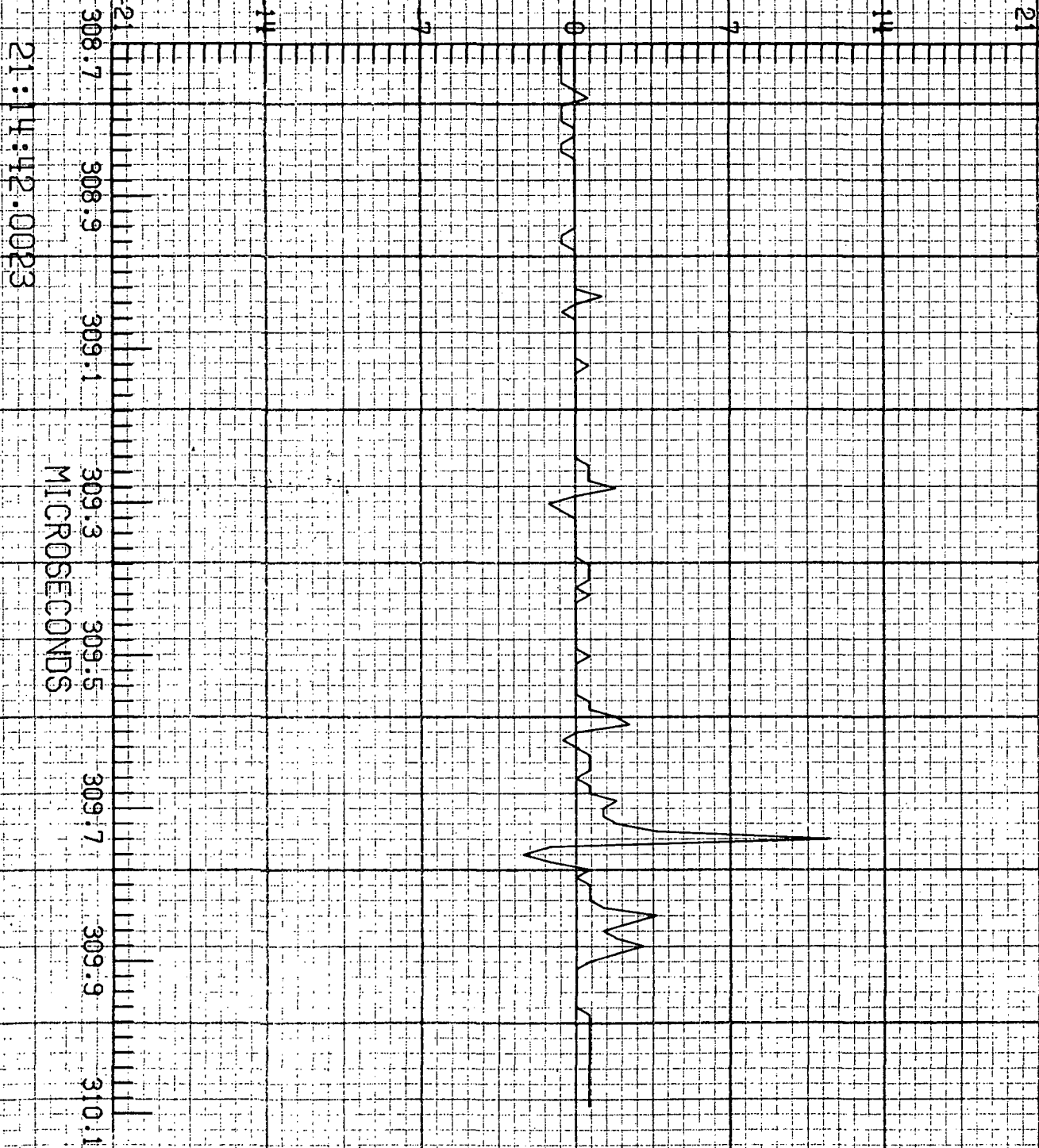
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F106 LIGHTNING/TK8/M.THOMAS  
RUN NO. 2 S-001

TEST NO. 83-022

D DOT FWD  $A/m^2$





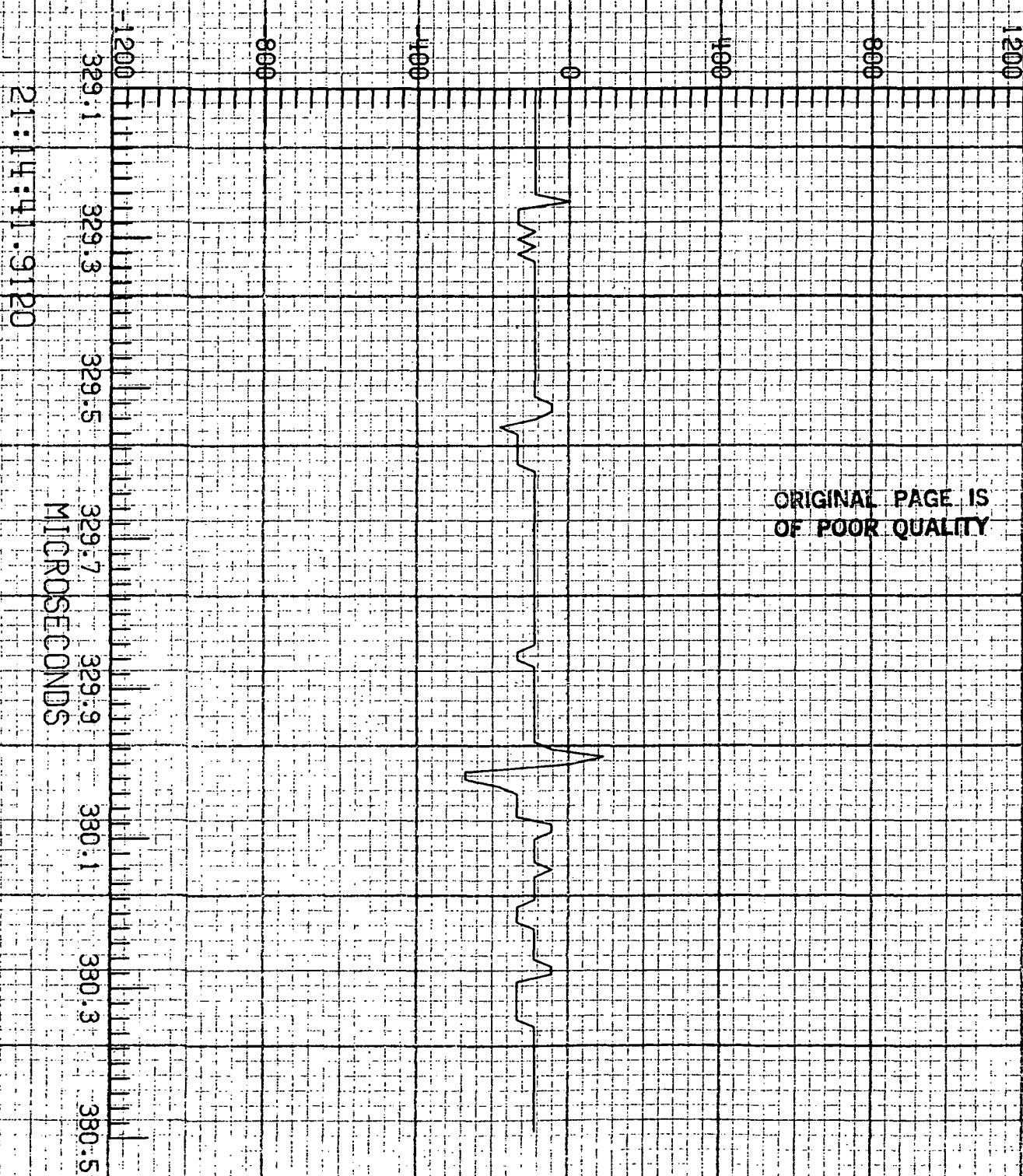
F106 LIGHTNING/TK 10/M.THOMAS

TEST NO. 83-02

RUN NO. 2

S-001

B DOT L T/S



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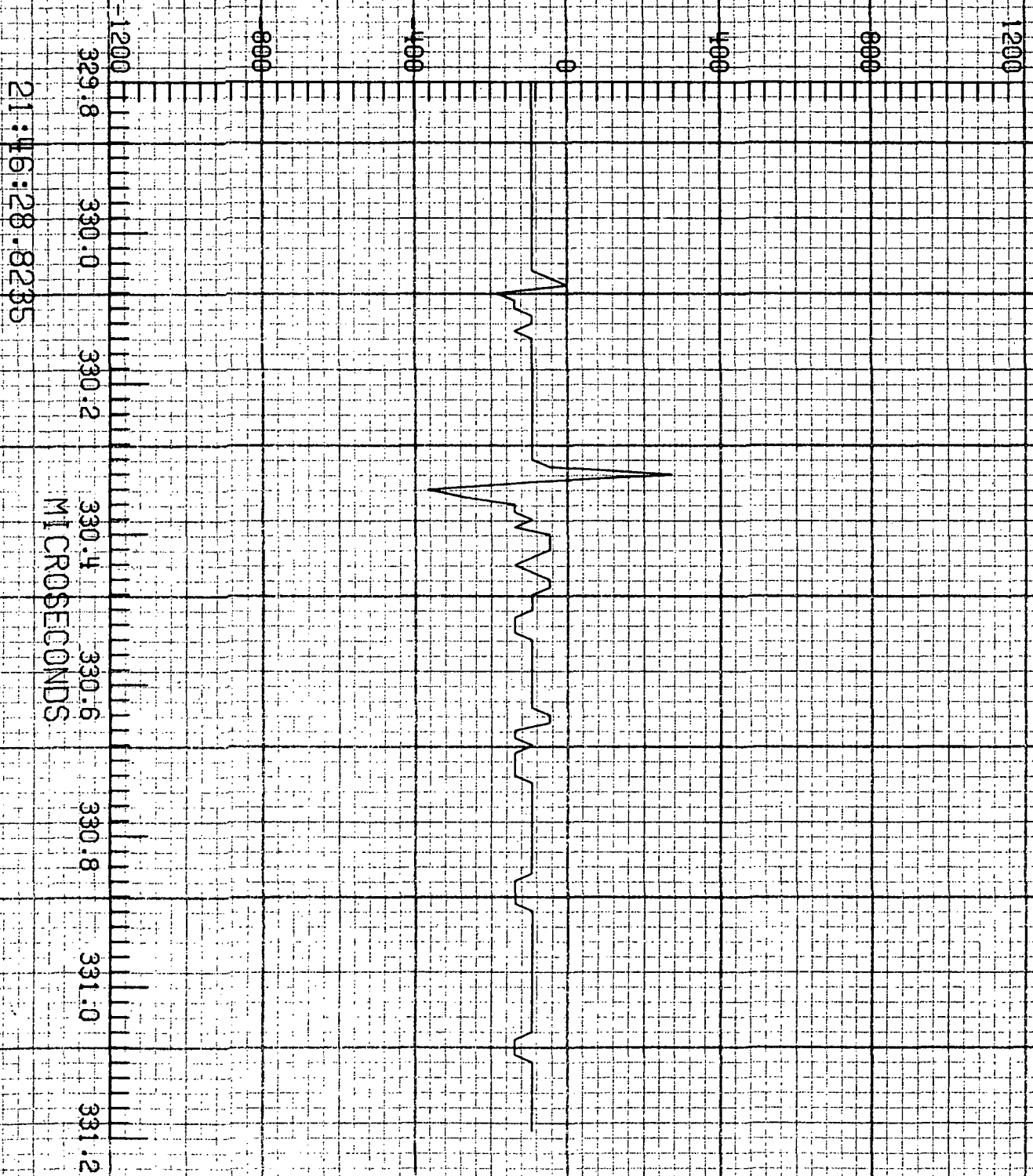
F106 LIGHTNING/TK 10/M. THOMAS

TEST NO. 83-02

RUN NO. 3

N-001

B DOT L T/S



F106 LIGHTNING/TK.8/M.THOMAS

TEST NO. 83-02

RUN NO. 1

S-001

D DOT FWD A/m<sup>2</sup>

18:07:25.9058

MICROSECONDS

309.7  
309.9  
310.1  
310.3  
310.5  
310.7  
310.9  
311.1



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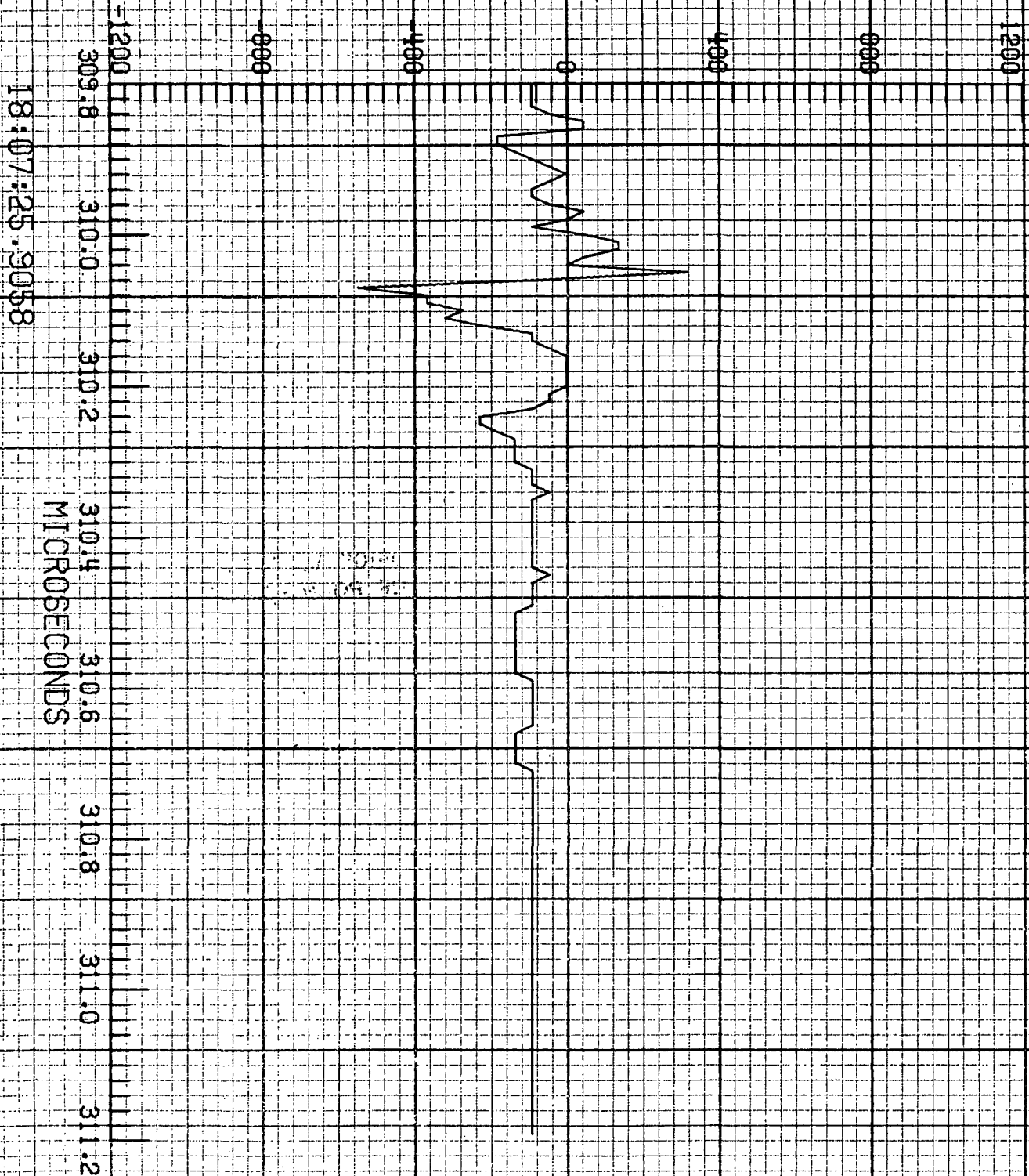
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TEST NO. 83-023

RUN NO. 1

S-001

B DOT L T/S



F106 LIGHTNING/TK.8/M.THOMAS

TEST NO. 83-02

RUN NO. 1

S-001

D DOT FWD  $A/m^2$

18:07:25.9058

1210.6

1210.8

1211.0

1211.2

1211.4

1211.6

1211.8

1212.0

MICROSECONDS

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F106 LIGHTNING/TK-10/M. THOMAS

TEST NO. 83-02

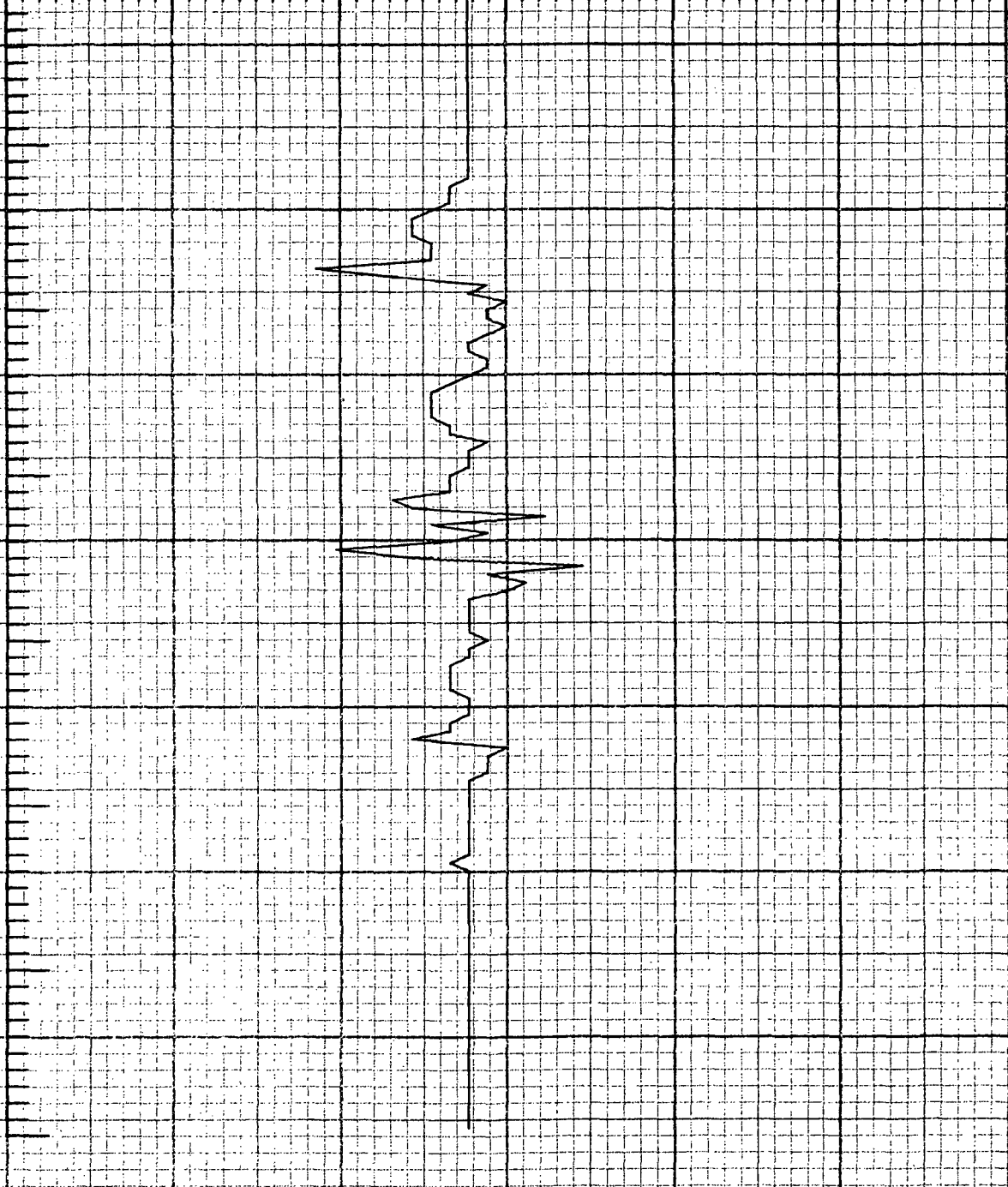
RUN NO. 1

S=001

B DOT L T/S

1200 800 400 0 400 800 1200

1210.6 1210.8 1211.0 1211.2 1211.4 1211.6 1211.8 1212.0



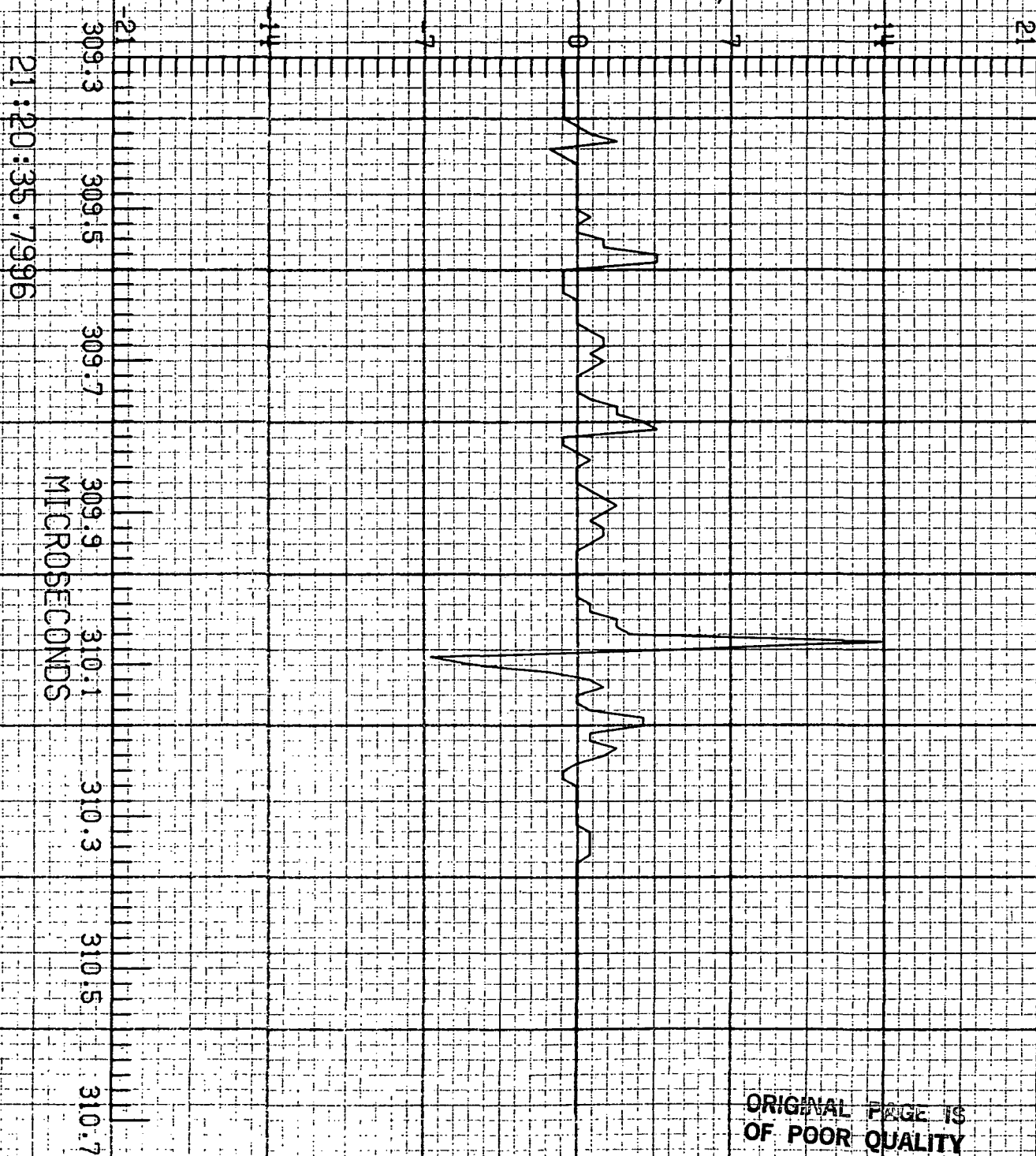
18:07:25.9058

MICROSECONDS

F106 LIGHTNING/TK.8/M.THOMAS  
RUN NO. 1 S-001

TEST NO. 83-02

D DOT FWD  $A/m^2$



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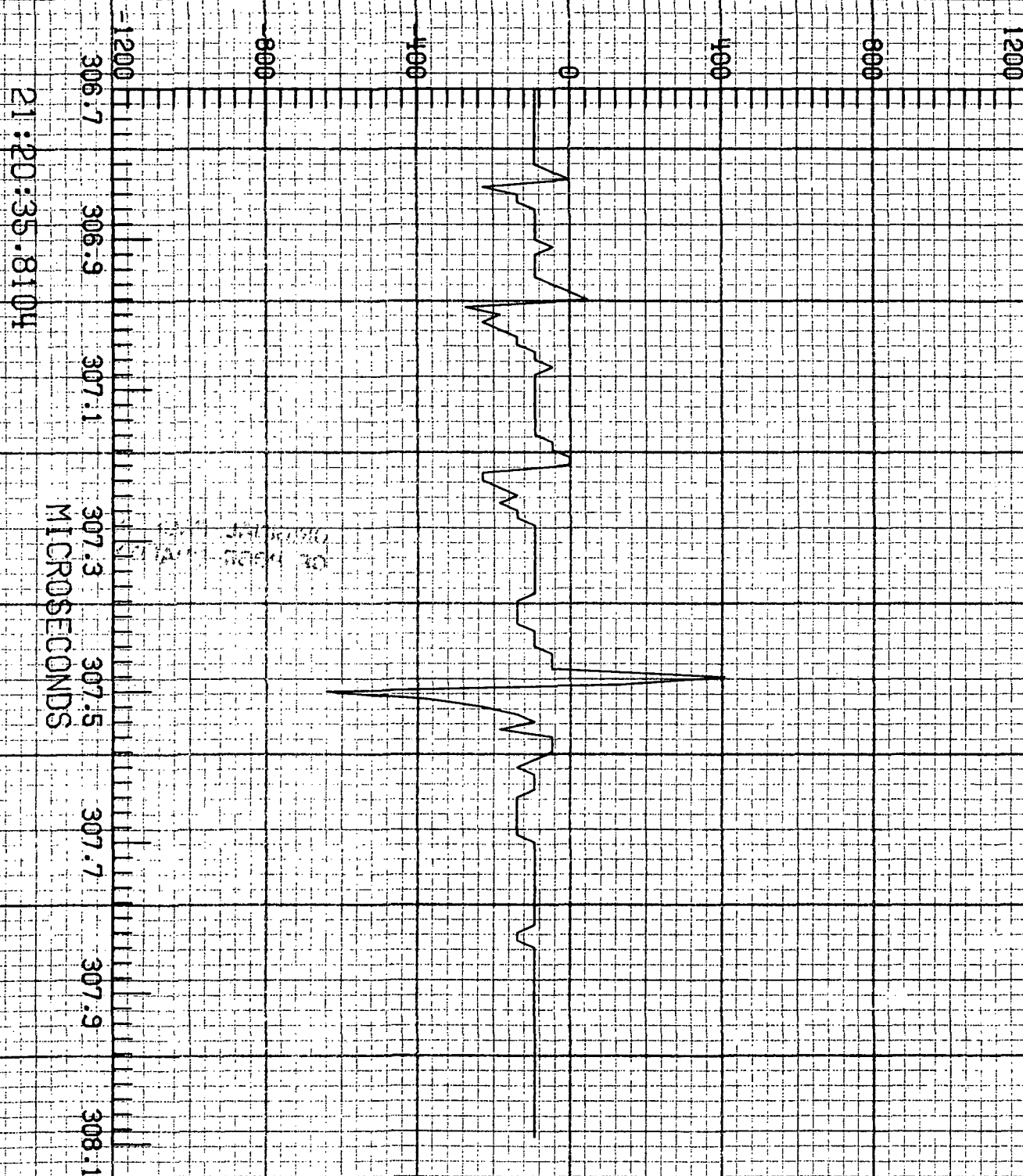
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TEST NO. 83-02

RUN NO. 1

S-001

B DOT L T/S



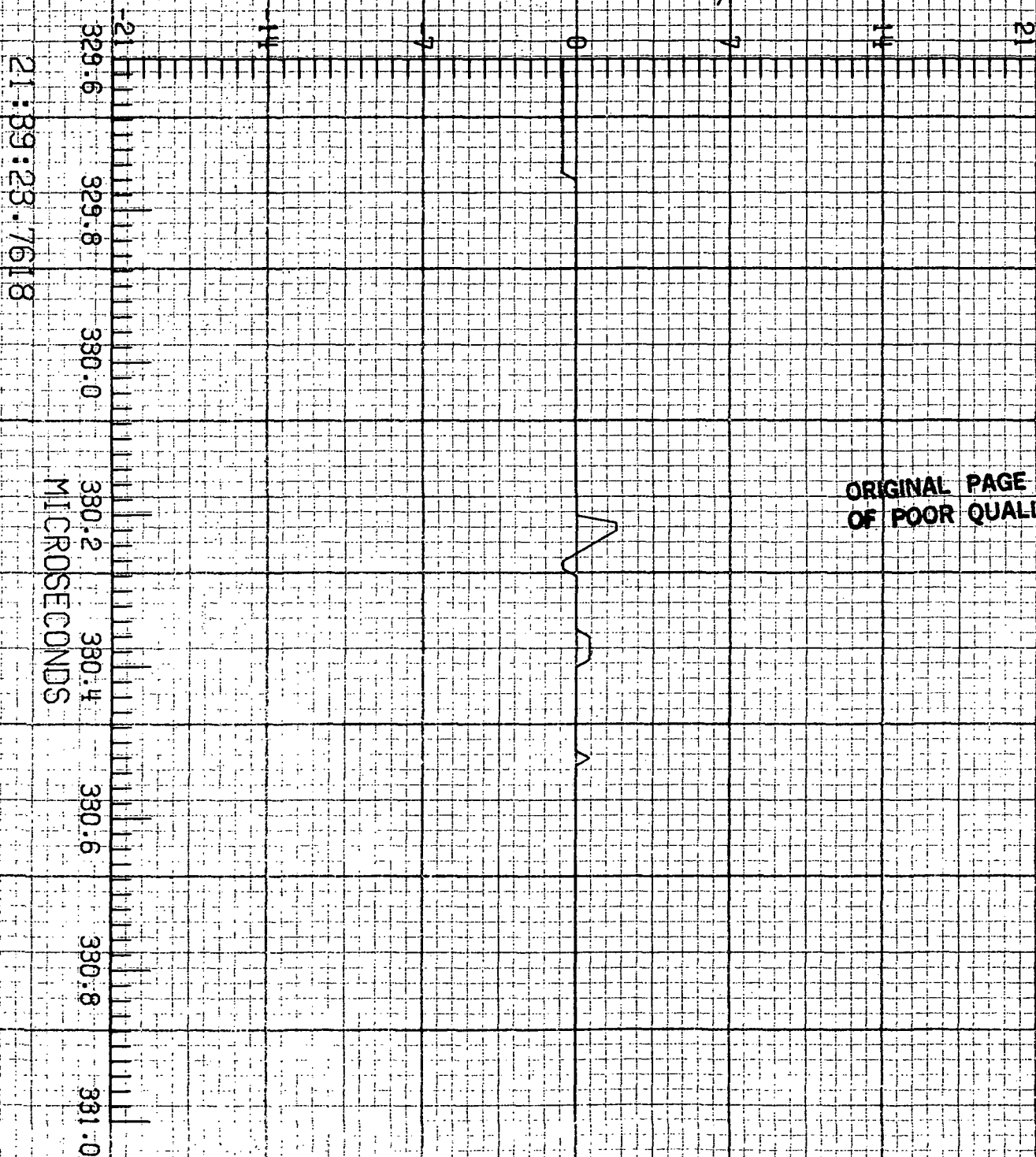


F106 LIGHTNING/TK.8/M.THOMAS  
RUN NO. 2

S-003

TEST NO. 83-02

D DOT FWD  $A/m^2$



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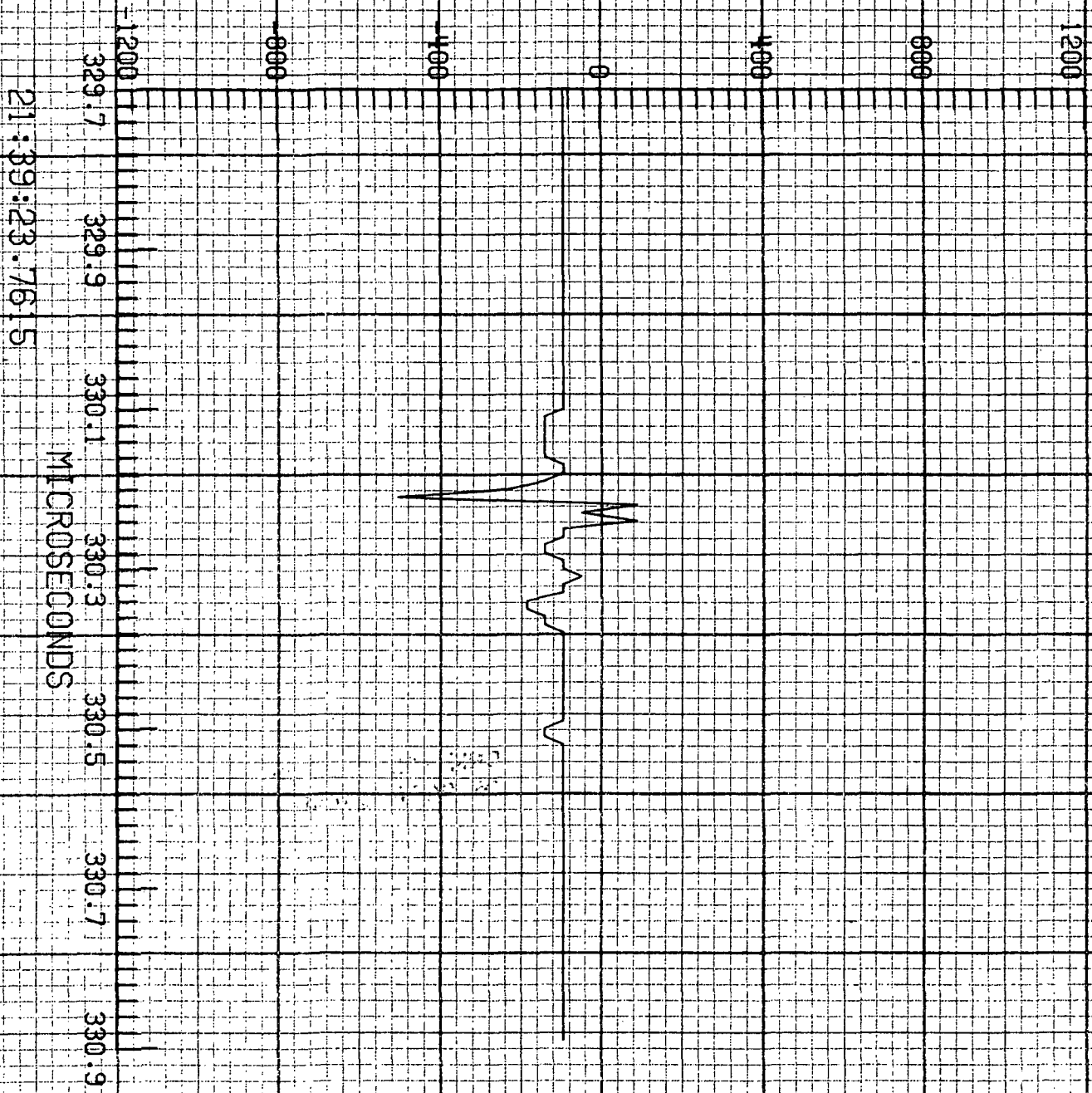
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TEST NO. 83-02

RUN NO. 2

S-003

B DOT I T/S



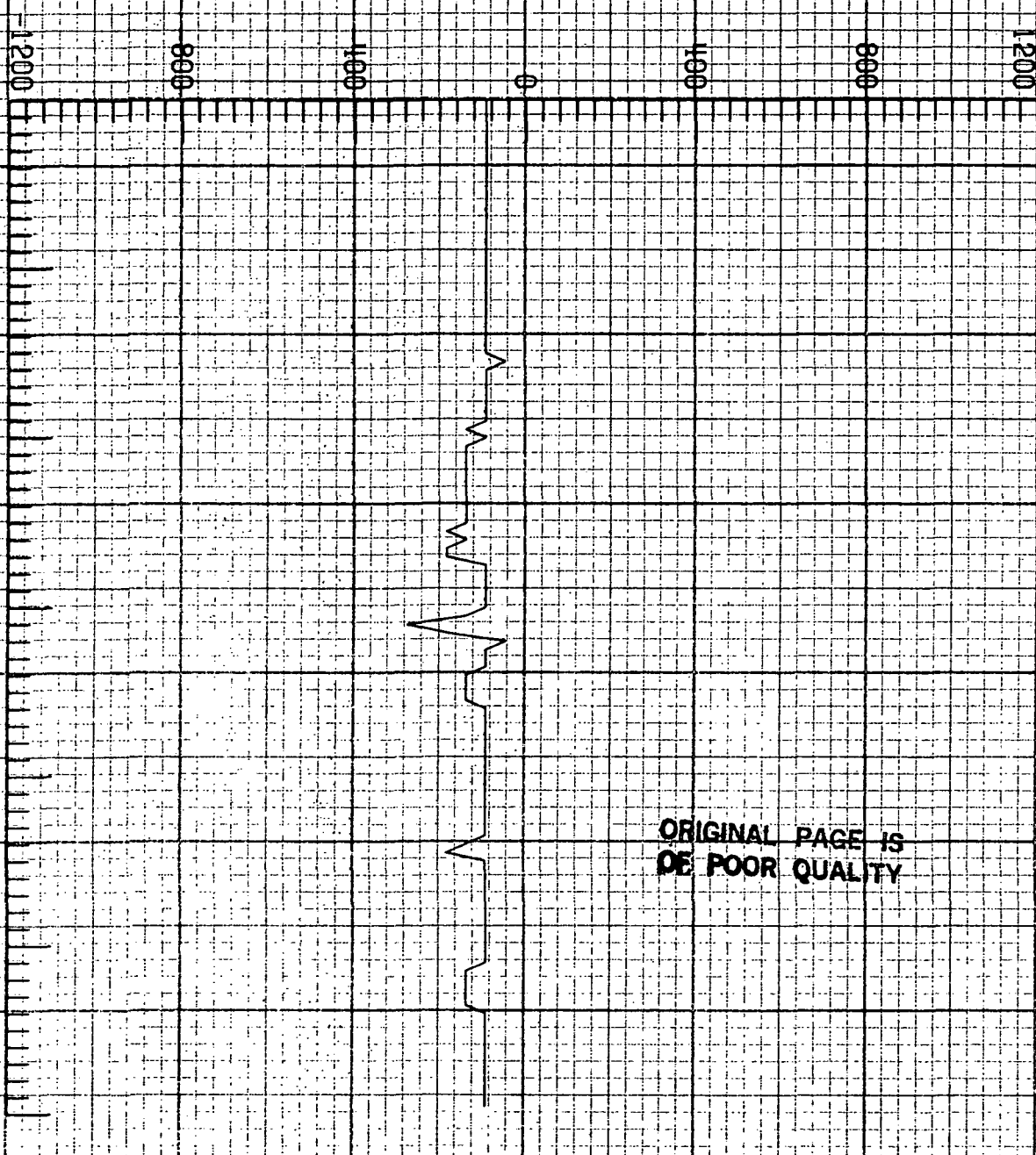
F106 LIGHTNING/TK.10/M.THOMAS

TEST NO. 83-02

RUN NO. 3

N-001

B DOT L T/S



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F106 LIGHTNING/TK.8/M.THOMAS

TEST NO. 83-02

RUN NO. 1

S-004

D DOT FWD

A/m<sup>2</sup>

21:42:18.7853

329.6  
329.8  
330.0  
330.2  
330.4  
330.6  
330.8  
331.0  
MICROSECONDS



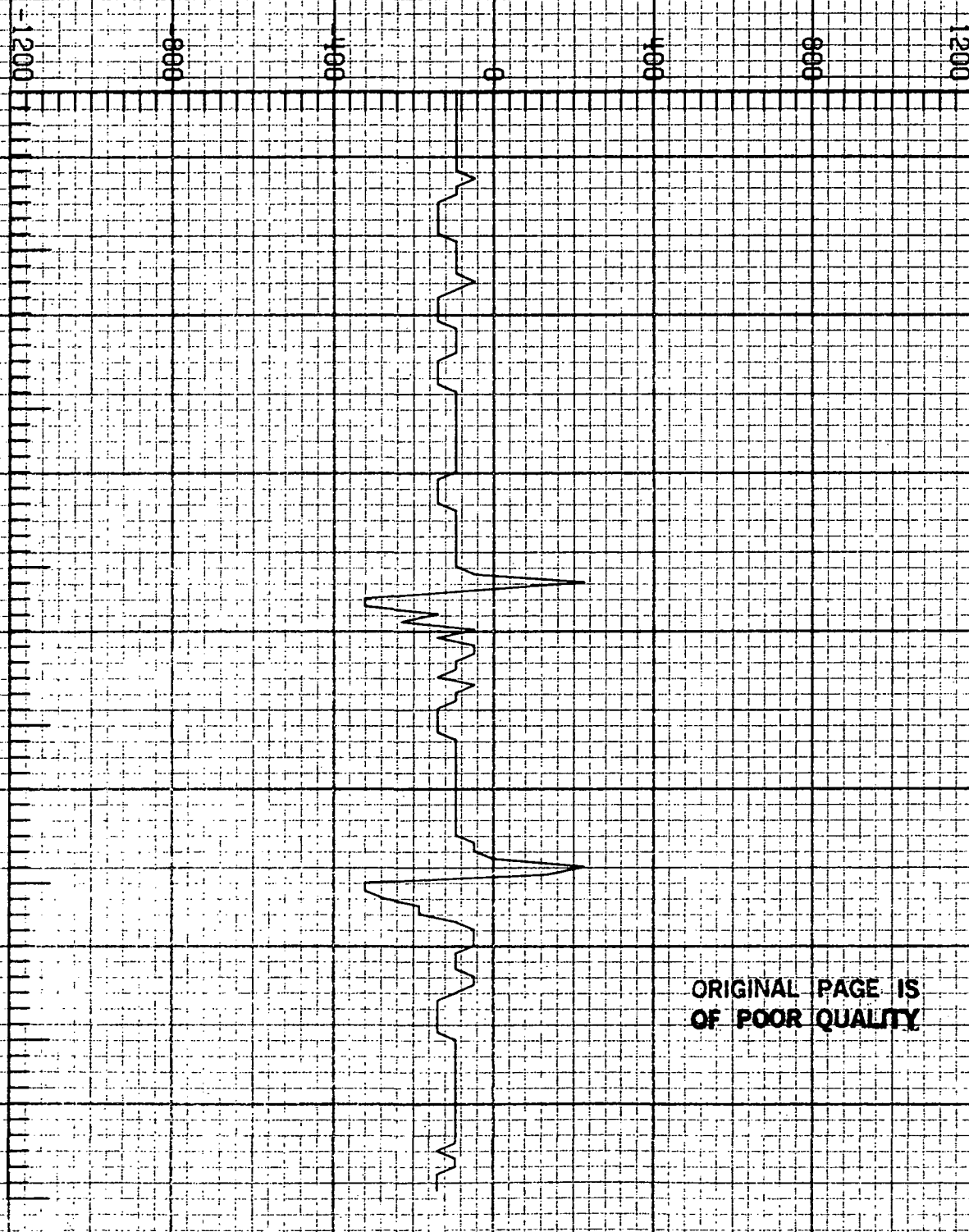
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TEST NO. 83-02

RUN NO. 4

S-004

B DOT L T/S



21:42:18.7848

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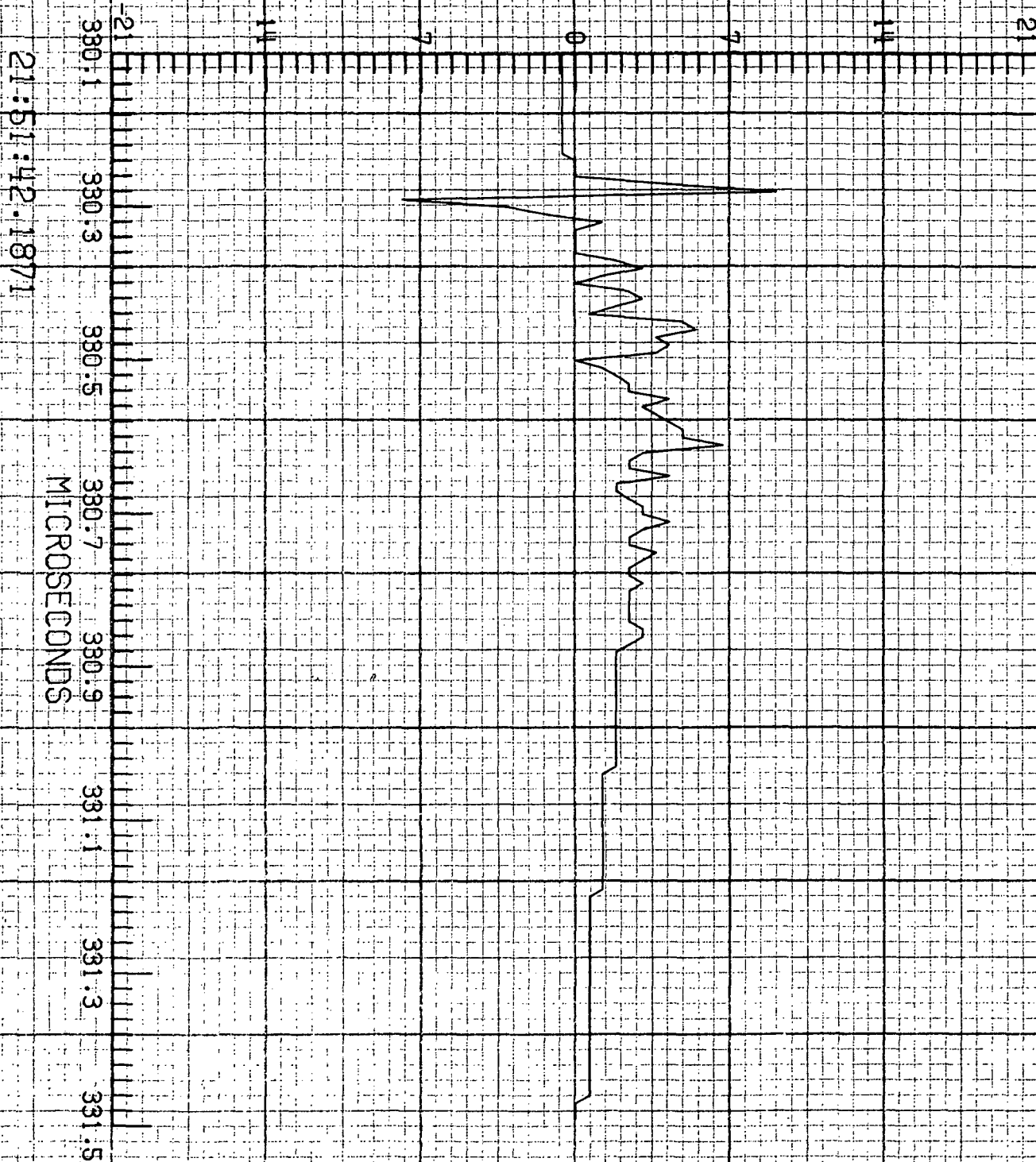
F106 LIGHTNING/TK.8/M.THOMAS

TEST NO. 83-02

RUN NO. 5

S-005

D DOT FWD  $A/m^2$



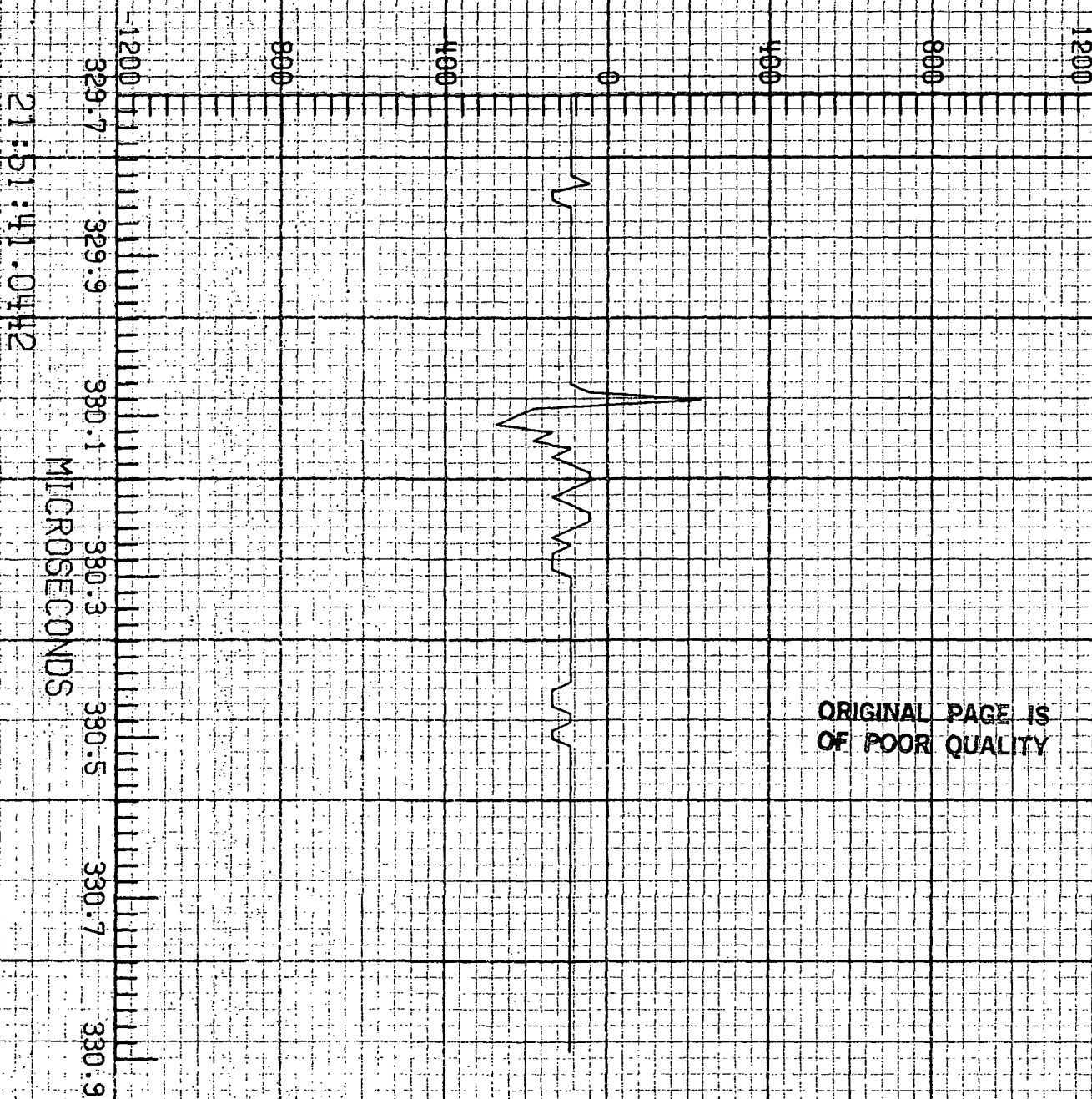
F106 LIGHTNING/TK.10/M.THOMAS

TEST NO. 83-02

RUN NO. 5

N-002

B DOT L T/S



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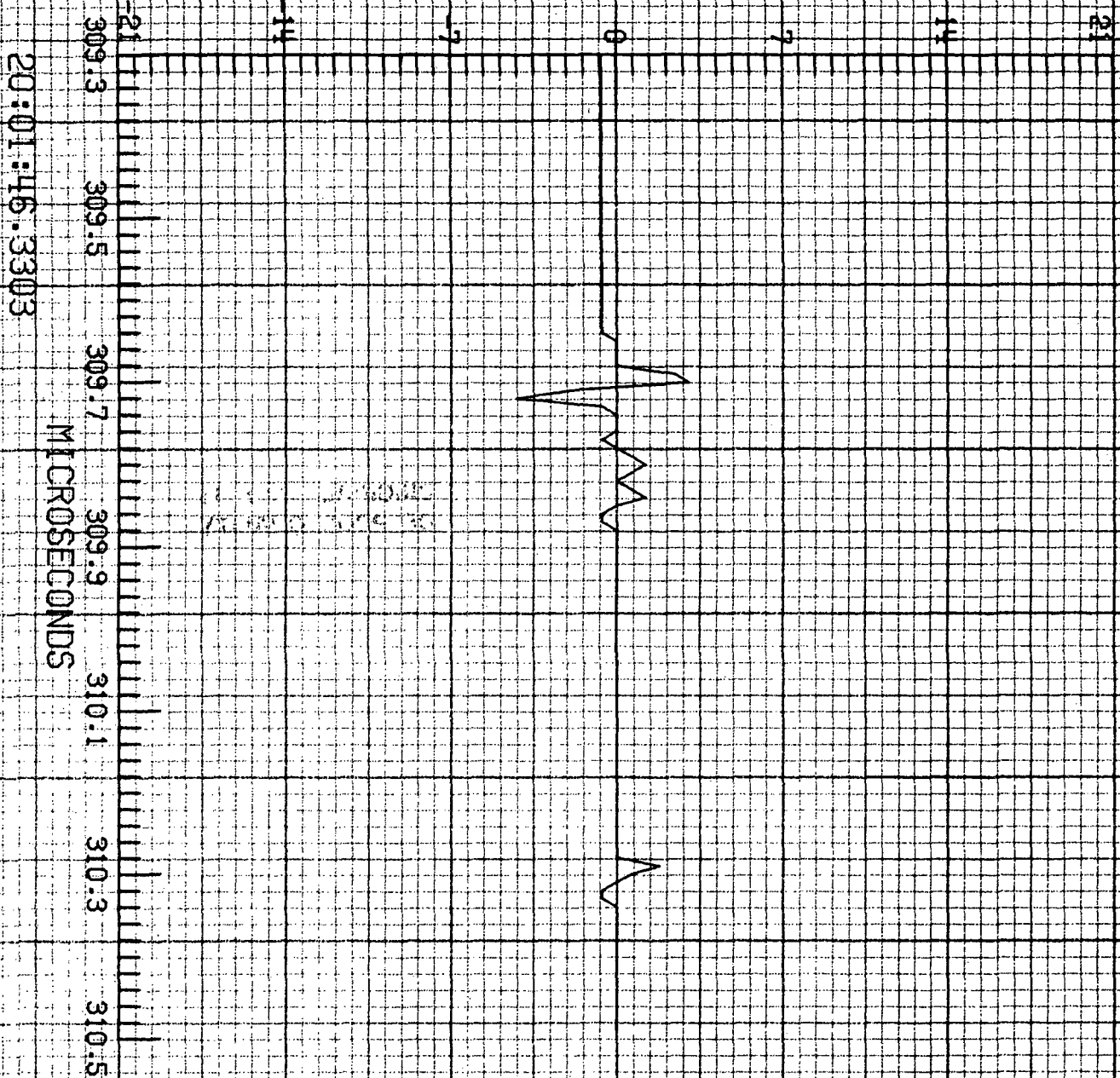
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TEST NO. 83-02

RUN NO. 4

N=005

D DOT FWD  $A/m^2$

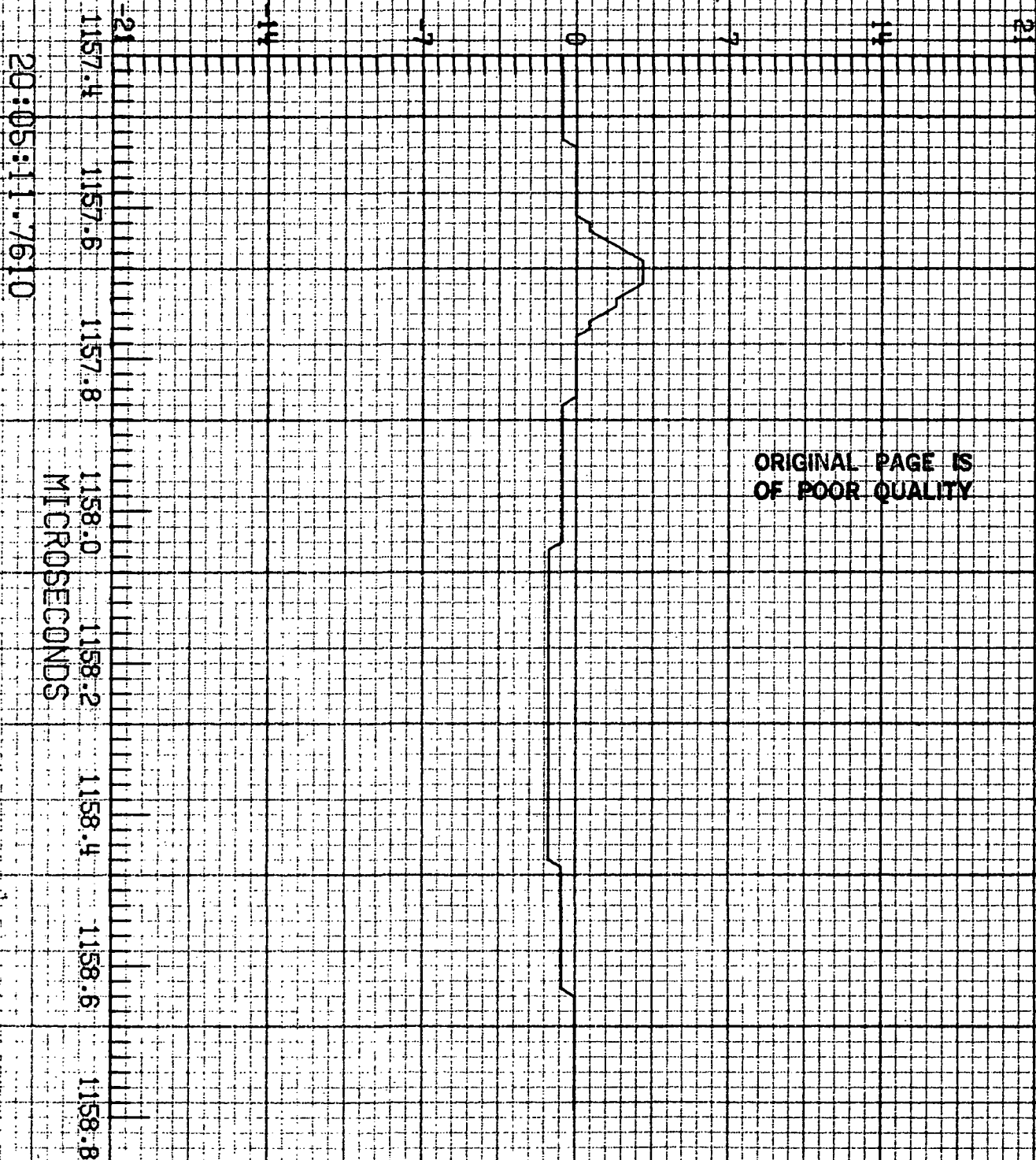




F106 LIGHTNING/TK.8/M.THOMAS  
RUN NO. 5 S-001

TEST NO. 83-02

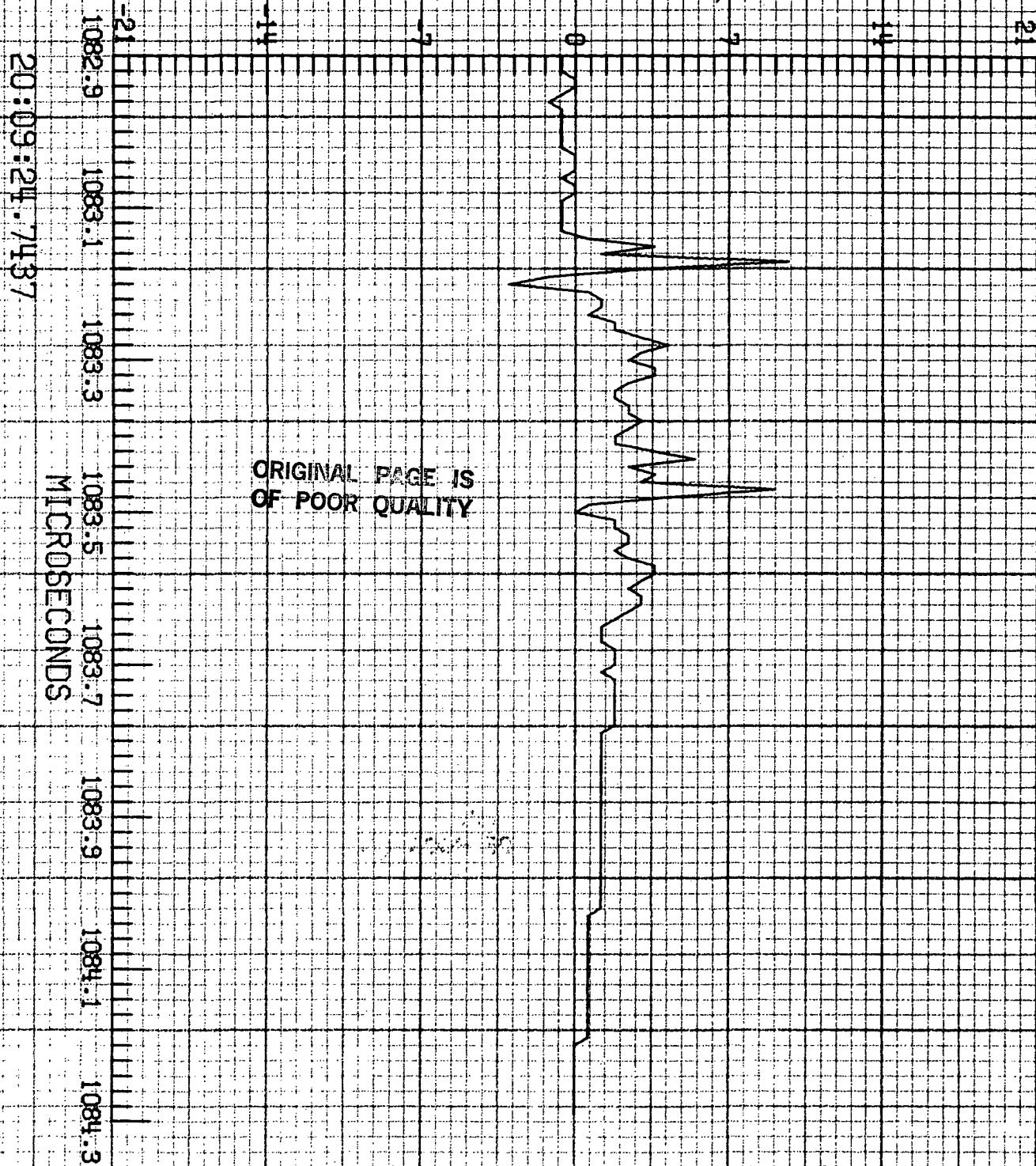
D DOT FWD  $A/m^2$



F106 LIGHTNING/TK.8/M.THOMAS  
RUN NO. 6 S-002

TEST NO. 83-02

D DOT FWD  $A/m^2$



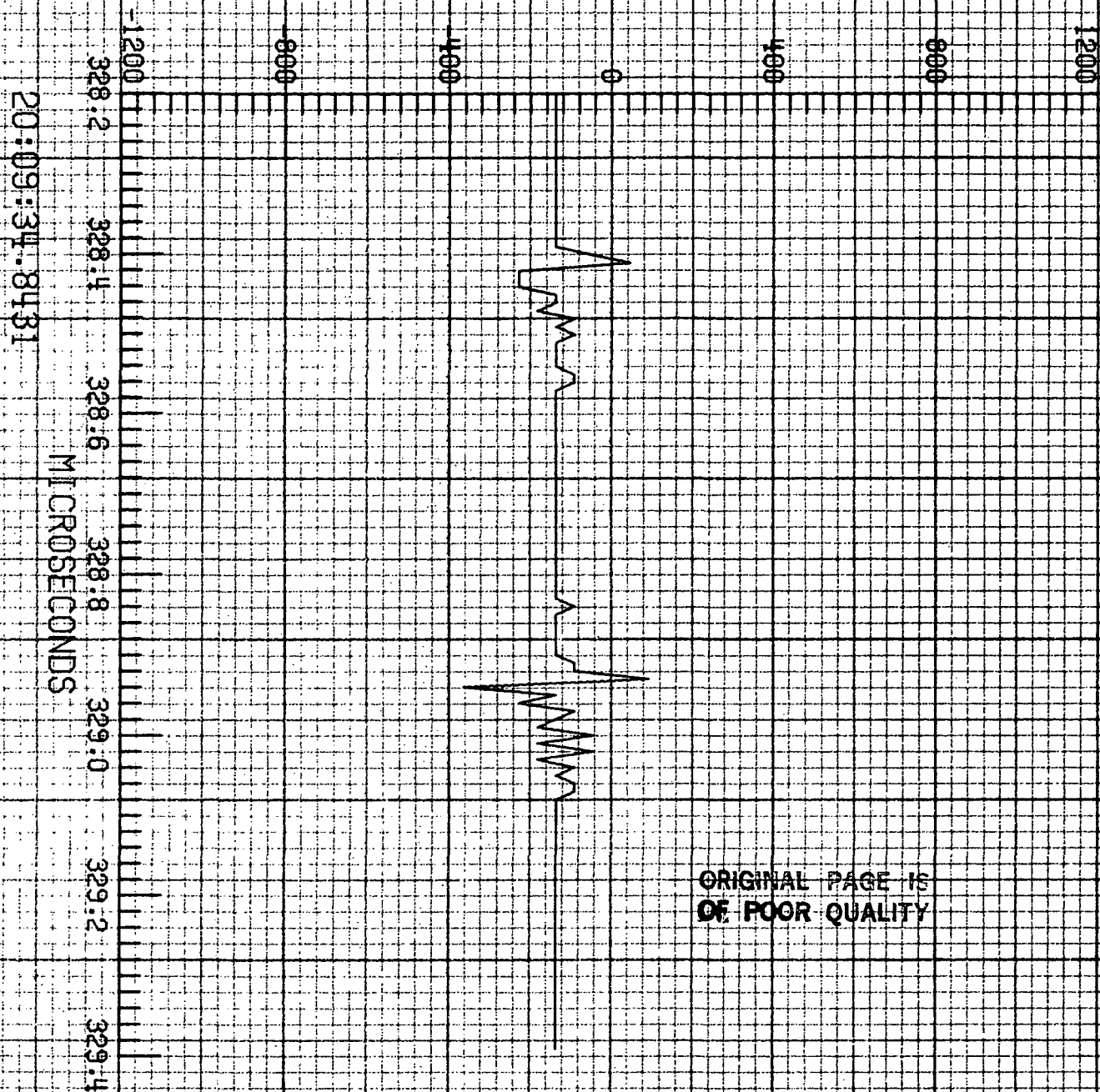
F-106 LIGHTNING/M. THOMAS

TEST NO. 83-02

RUN NO. 7

S=003

B DOT L T/S



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F106 LIGHTNING/TK.8/M.THOMAS

TEST NO. 83-02

RUN NO. 8

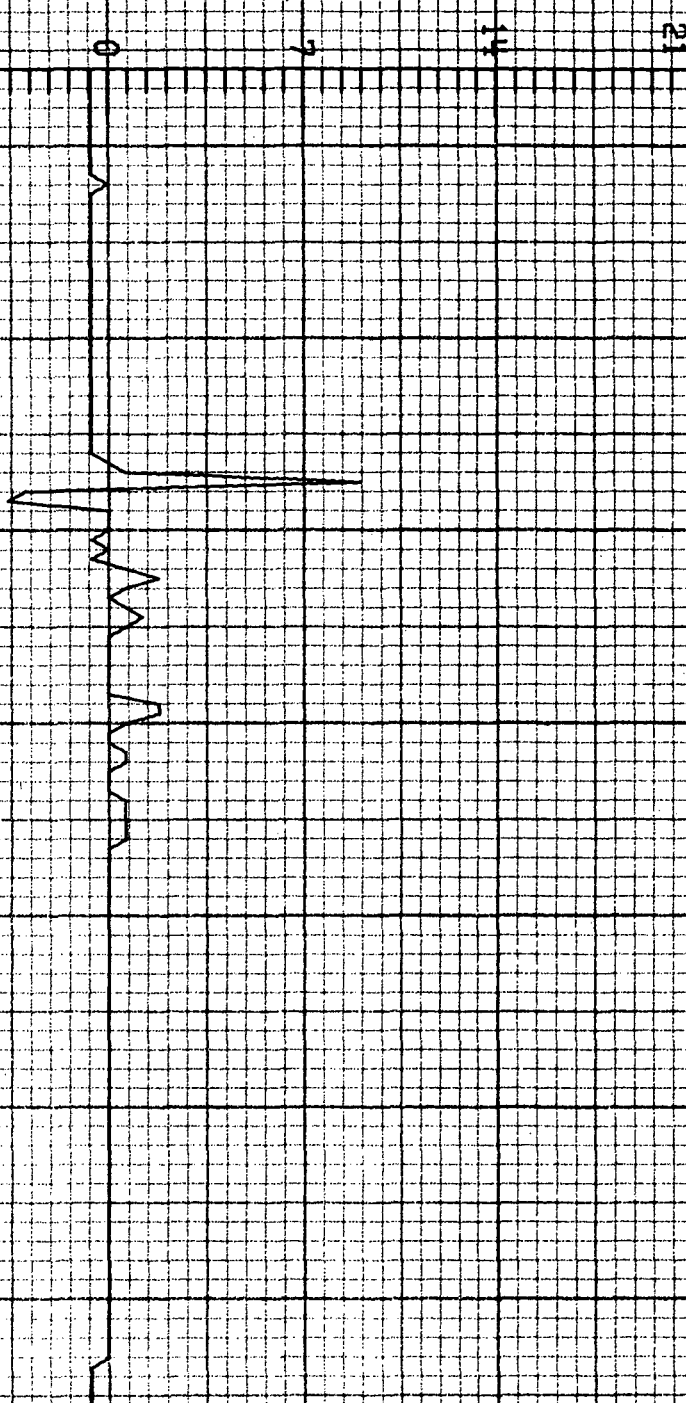
S-004

D DOT FWD  $A/m^2$

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MICROSECONDS

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TEST NO. 83-02

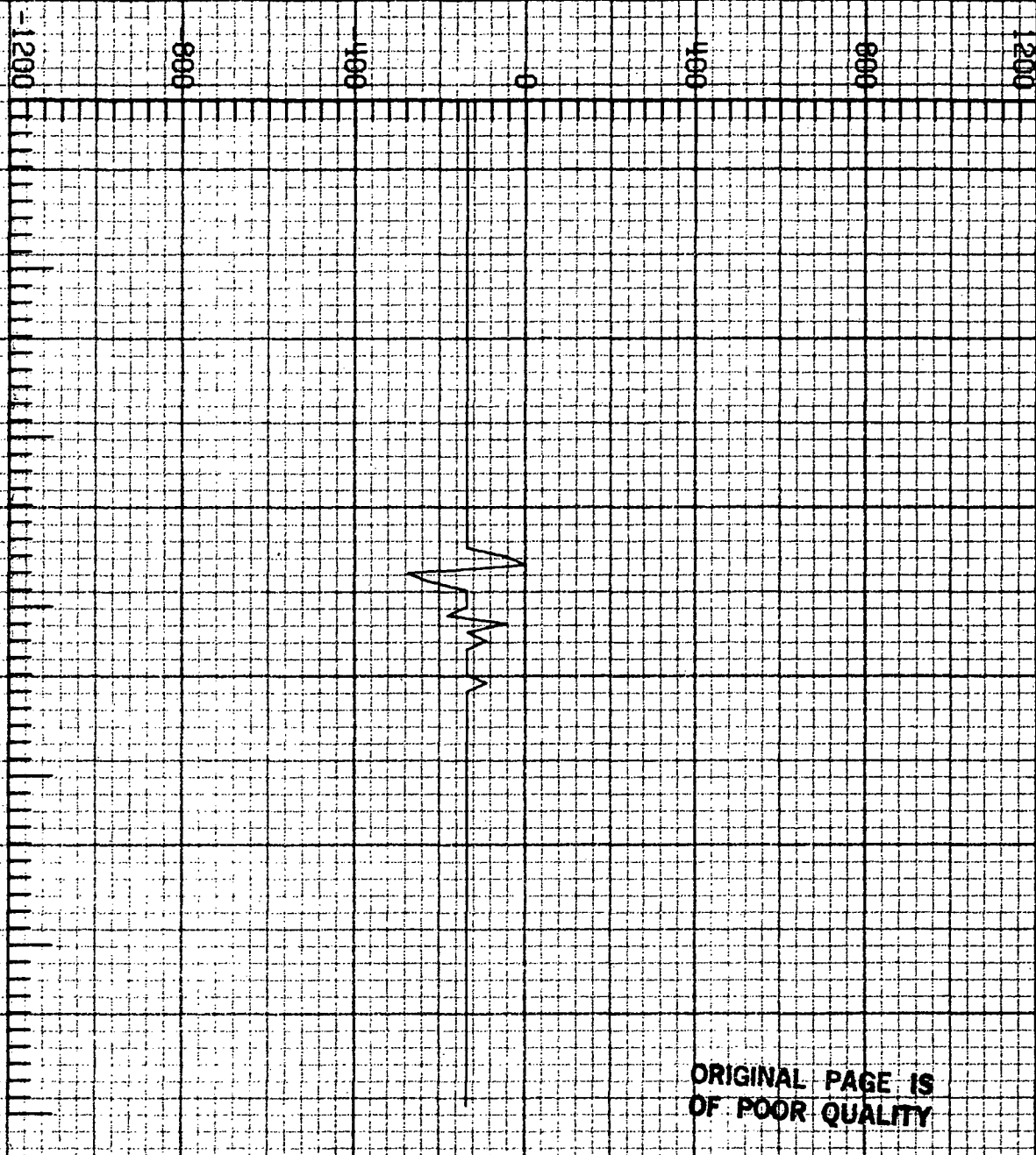
RUN NO. 8

S-004

B DOT IL T/S

20:12:55.0922

MICROSECONDS



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F-106 LIGHTNING/M. THOMAS

TEST NO. 83-02

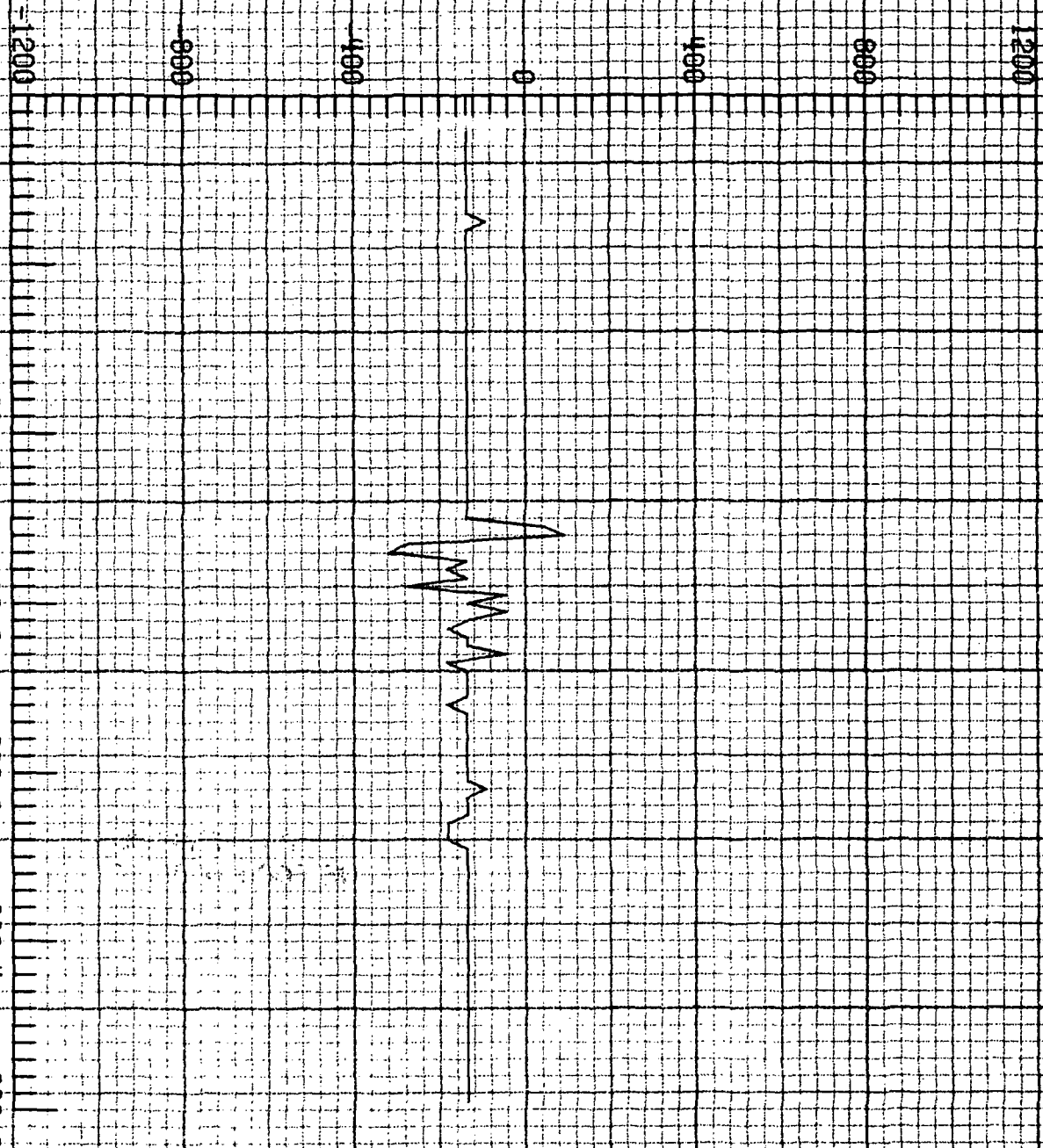
RUN NO. 9

N-006

B DOT 1 I/S

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MICROSECONDS



F-106 LIGHTNING/M. THOMAS

TEST NO. 83-02

RUN NO. A1

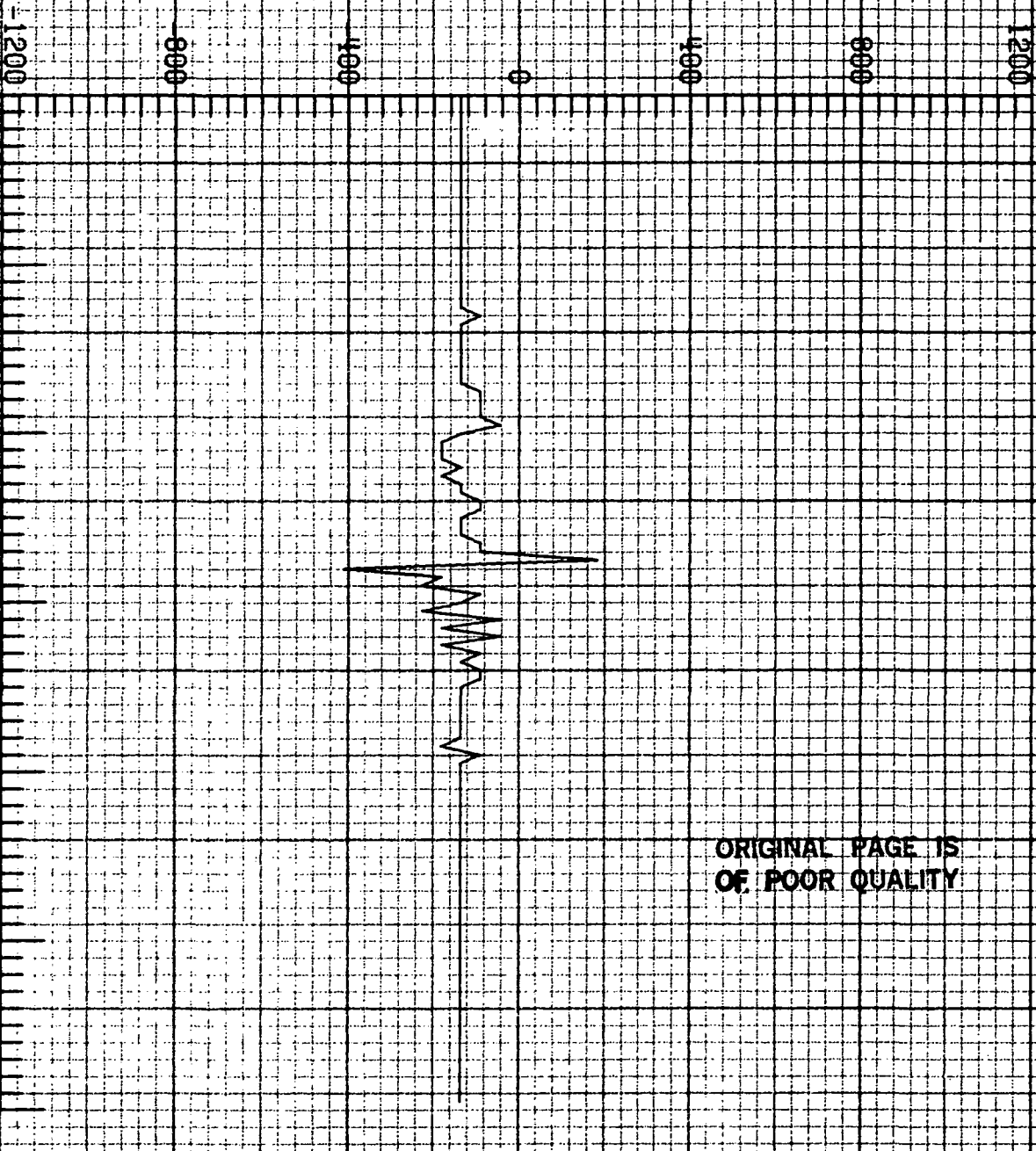
N-001

B DOT L T/S

22:18:0.4531

MICROSECONDS

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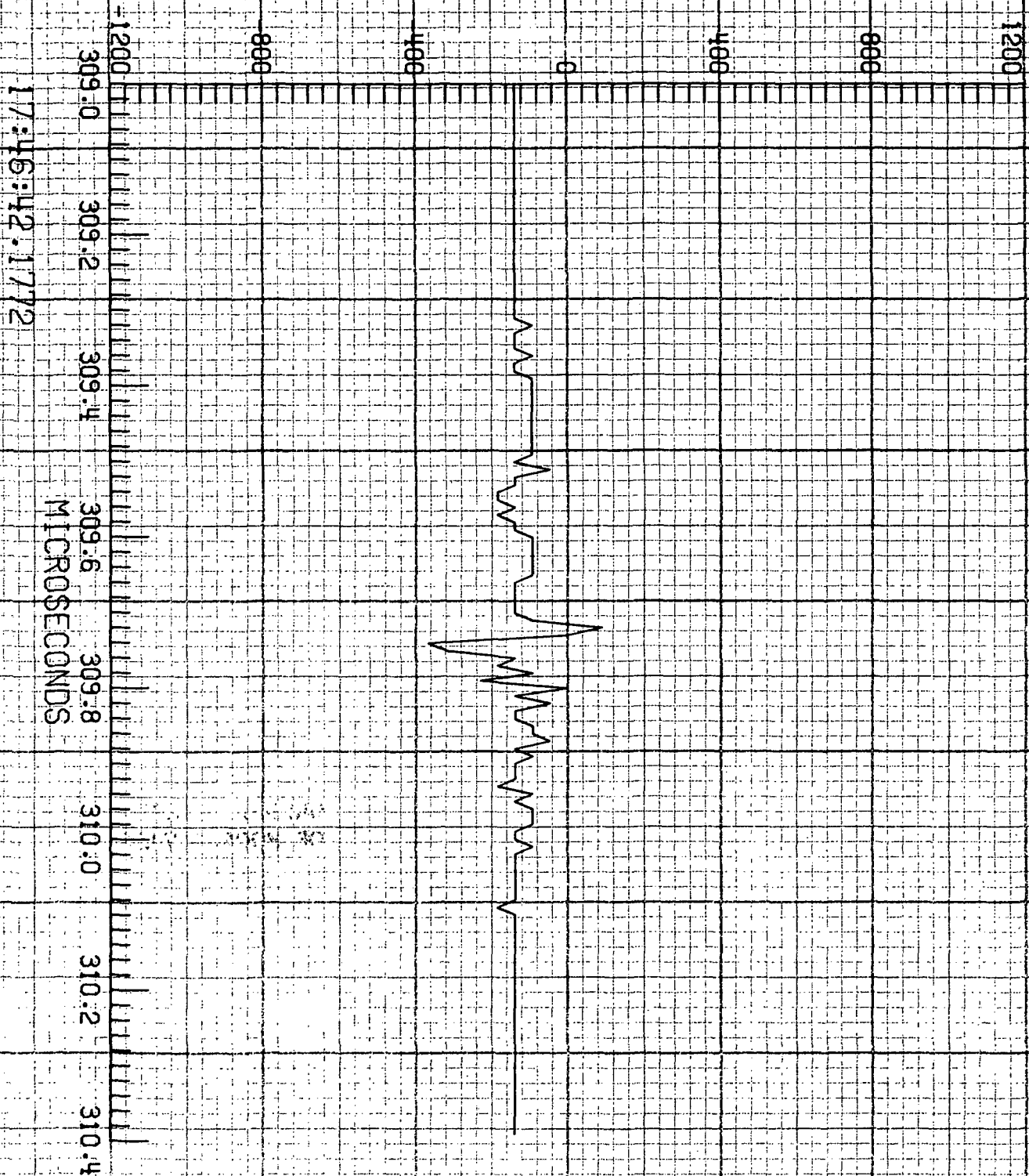
F106 LIGHTNING TK 10/THOMAS

TEST NO. 83-02

RUN NO. 1

N-001

B DOT L T/S



F106 LIGHTNING/TK 8/THOMAS

TEST NO. 83-028

RUN NO. 1

N-002

D DOT FWD  $A/m^2$

-21 -14 -7 0 7 14 21

17:46:43.5919

MICROSECONDS

309.4

309.6

309.8

310.0

310.2

310.4

310.6

310.8

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F106 LIGHTNING/TK 8/THOMAS

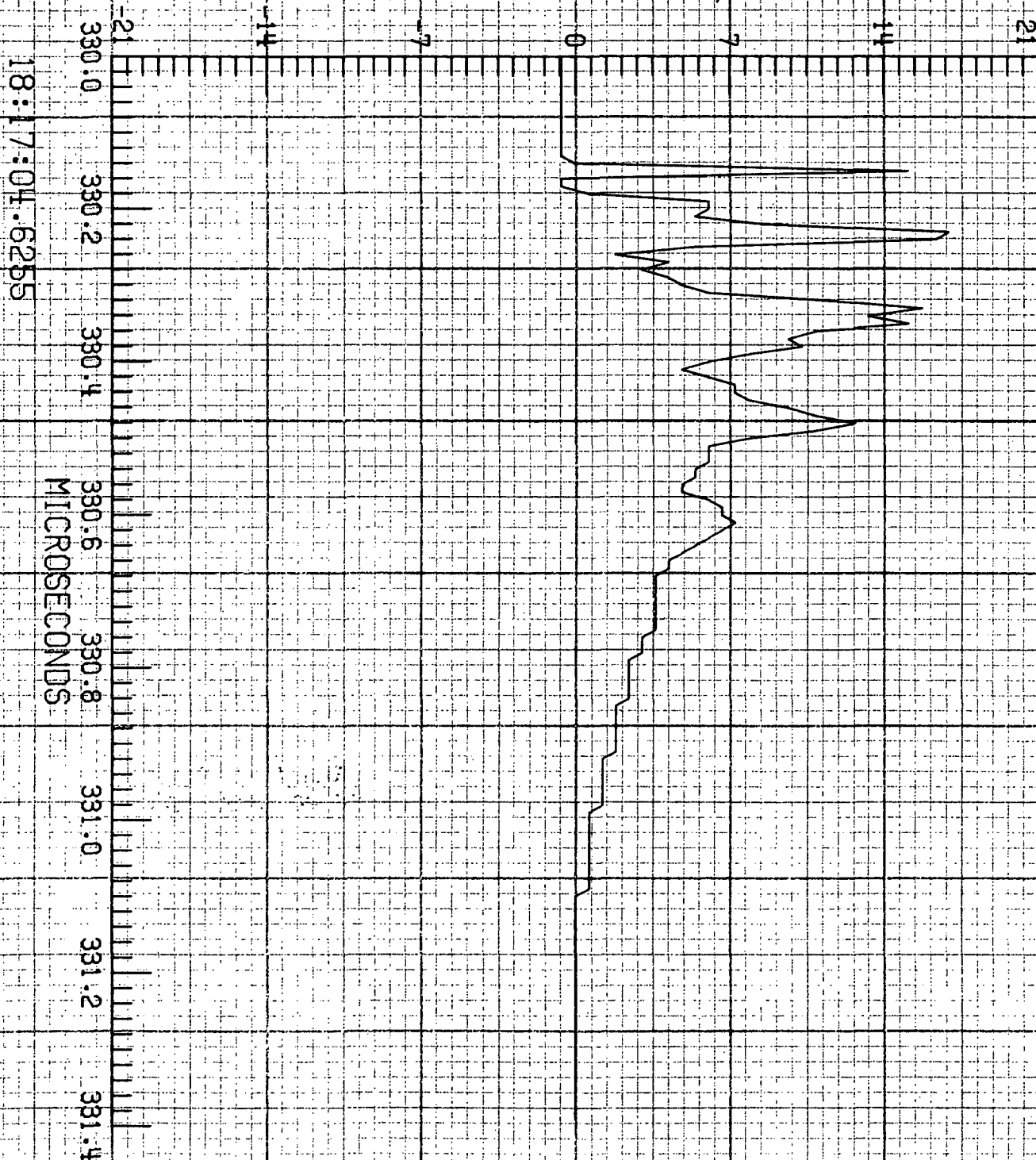
TEST NO. 83-028

RUN NO. 2

S-001

D DOT FWD

A/m<sup>2</sup>



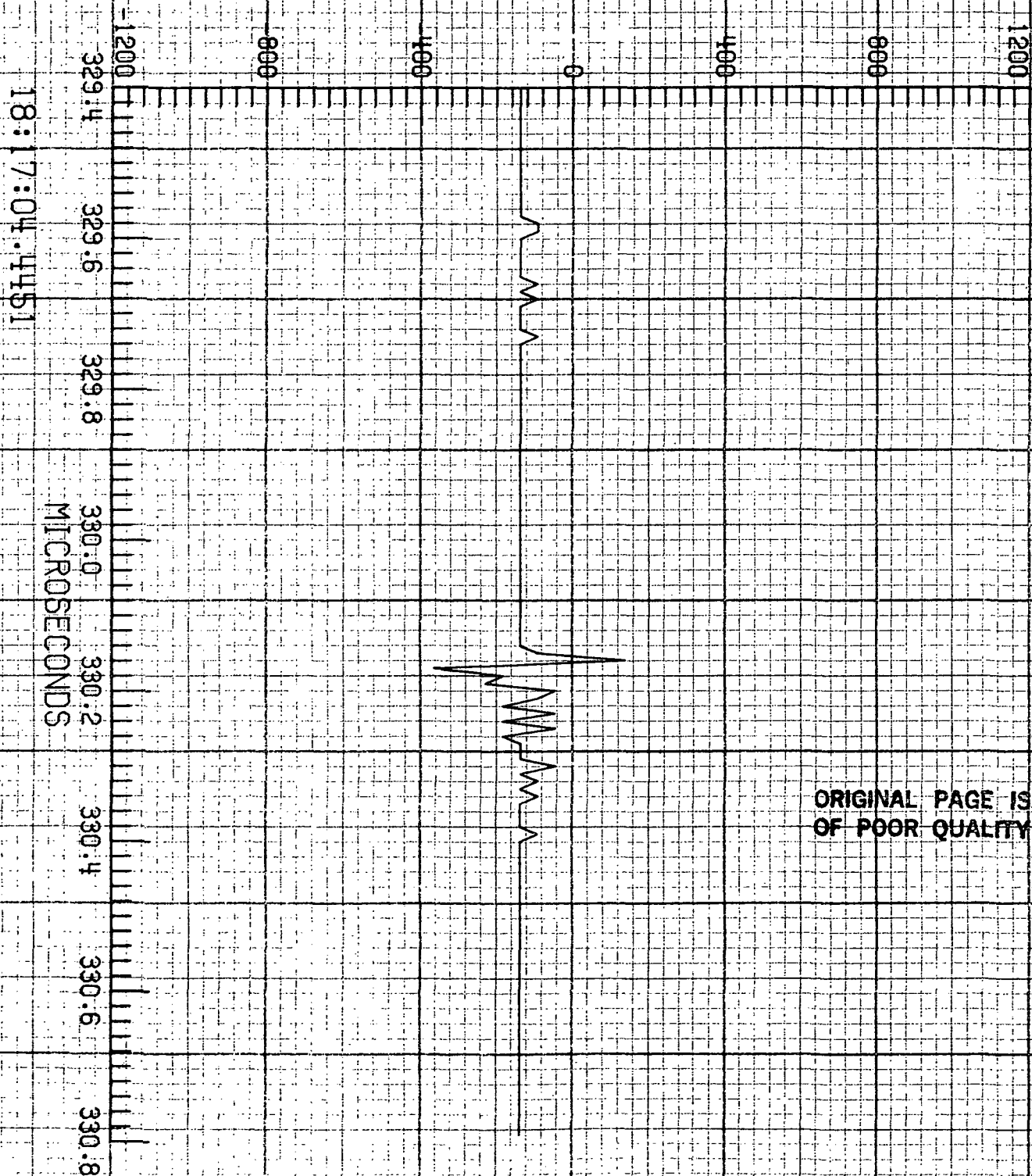
F106 LIGHTNING TK 10/THOMAS

TEST NO. 83-028

RUN NO. 2

S-001

B DOT L T/S



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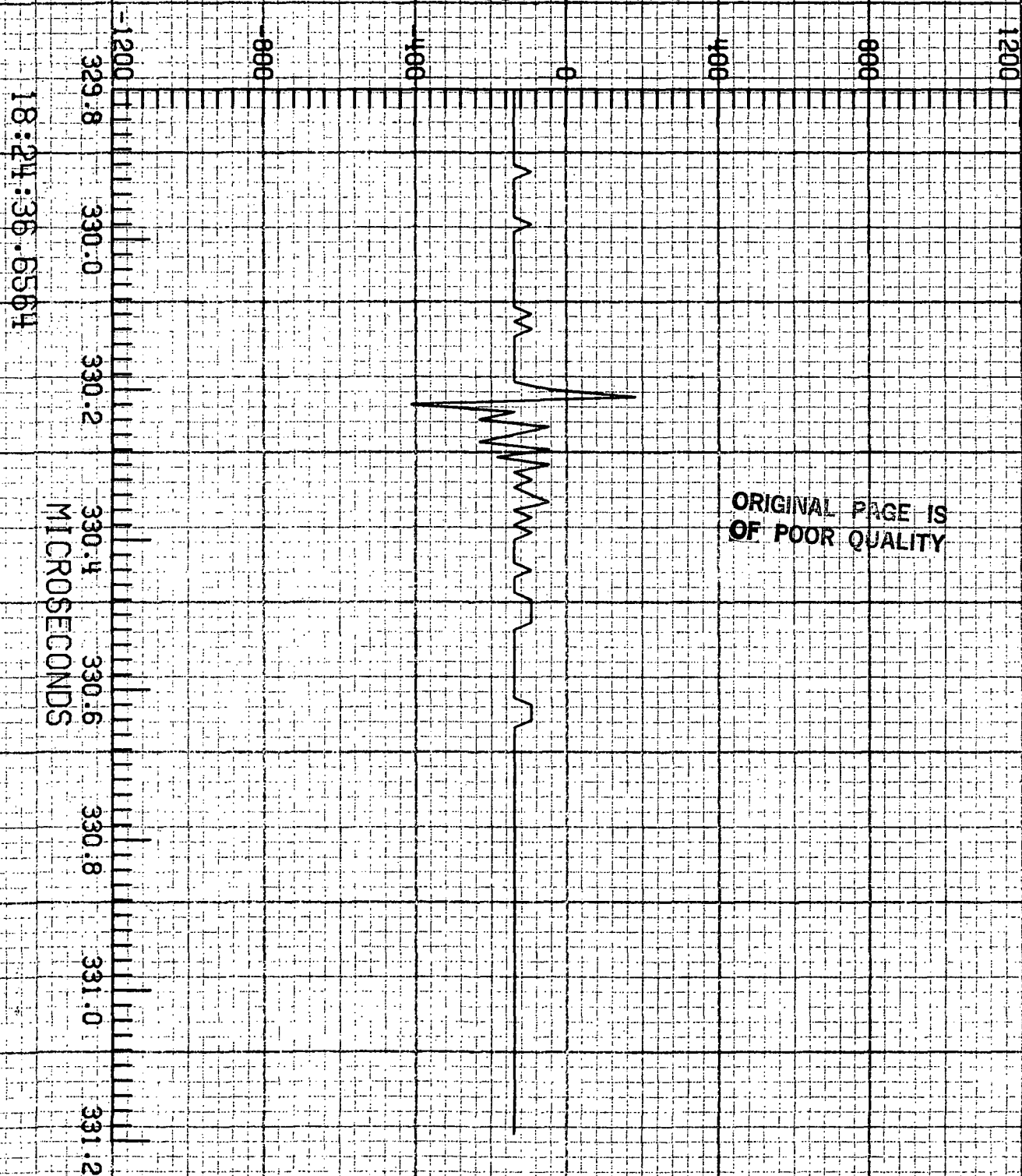
F106 LIGHTNING TK 10/THOMAS

TEST NO. 83-021

RUN NO. 8

N-003

B DOT L T/S



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TEST NO. 83-029

RUN NO. 1

N-001

D DOT FWD

$$A/m^2$$

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21:31:38.1546

# MICROSECONDS

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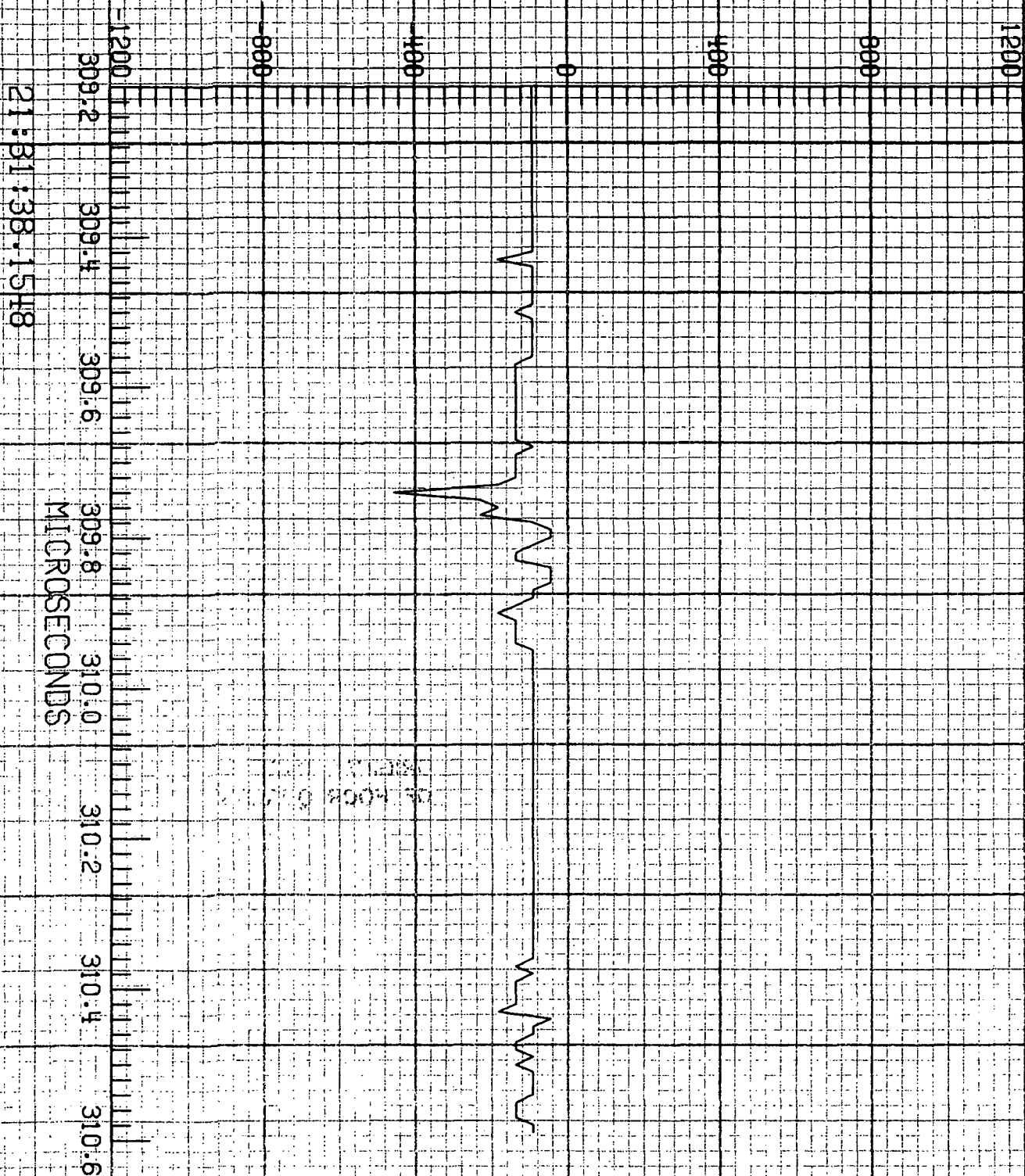
F106 LIGHTNING/TK.10/M.THOMAS

TEST NO. 83-029

RUN NO. 1

N-001

B DOT L T/S



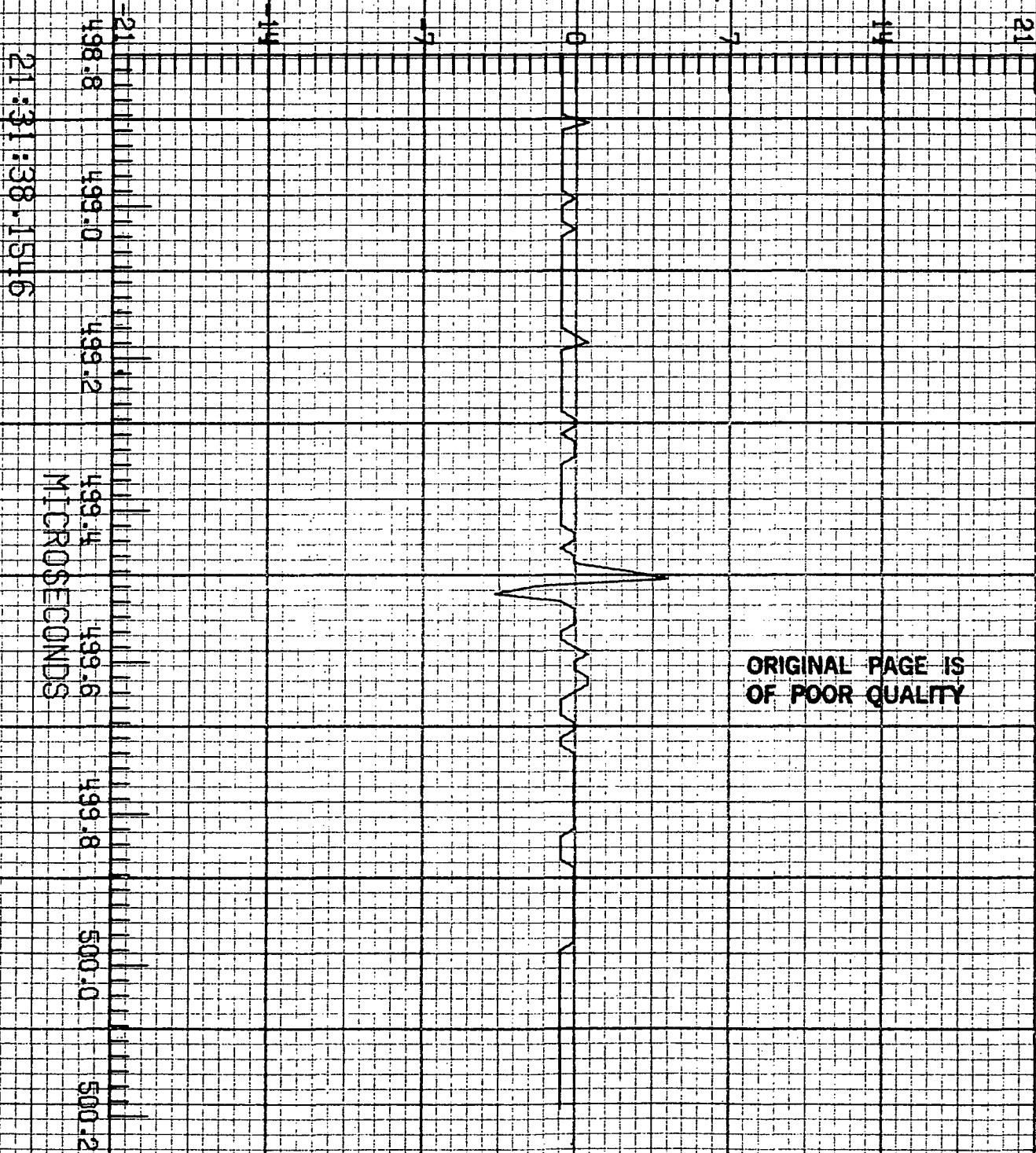
F106 LIGHTNING TK 8/THOMAS

TEST NO. 83-02

RUN NO. 1

N-001

D DOT FWD  $A/m^2$



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F106 LIGHTNING/TK.10/M.THOMAS

TEST NO. 83-029

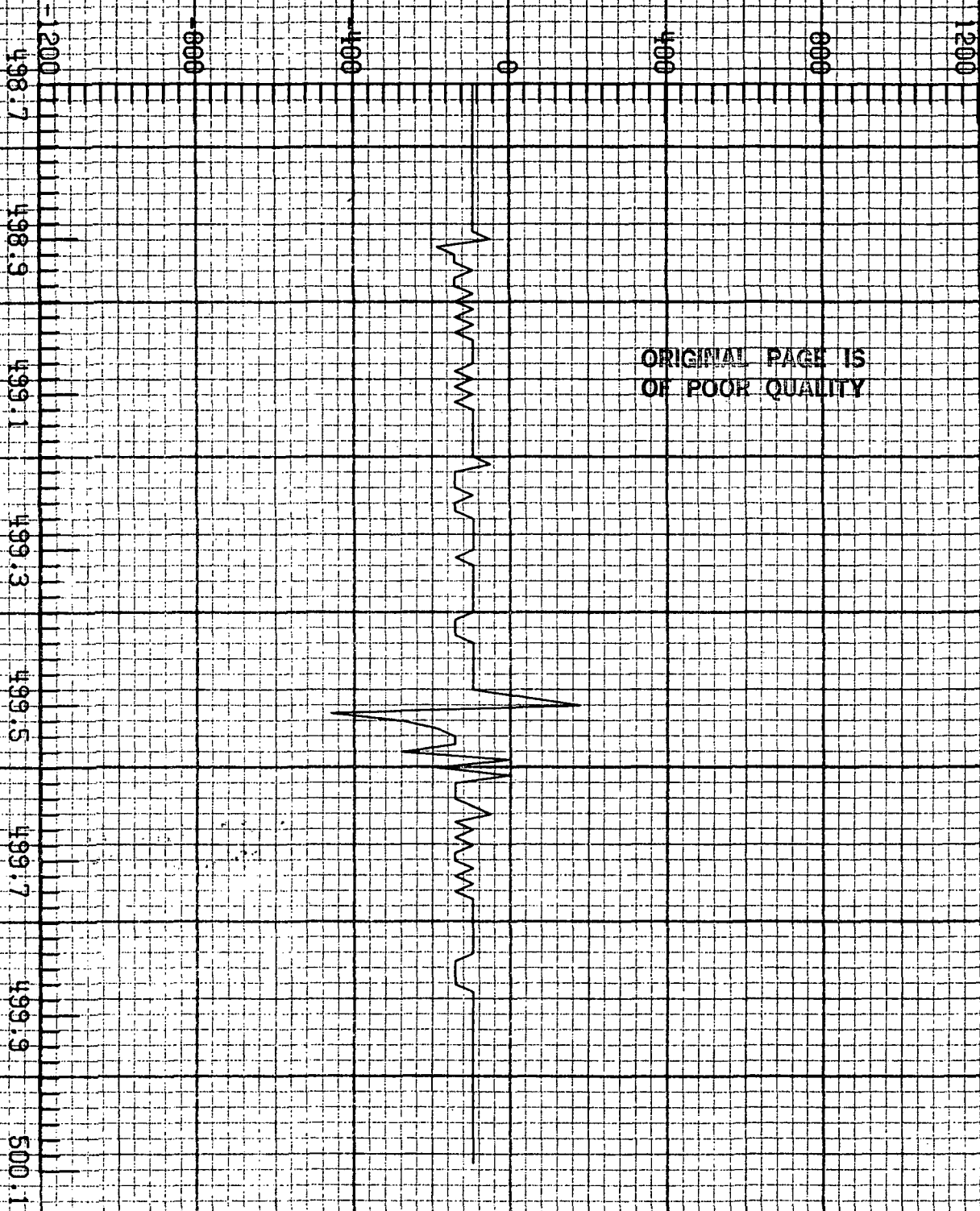
RUN NO. 1

N=001

B DOT 1 T/S

21:31:38.1548

MICROSECONDS





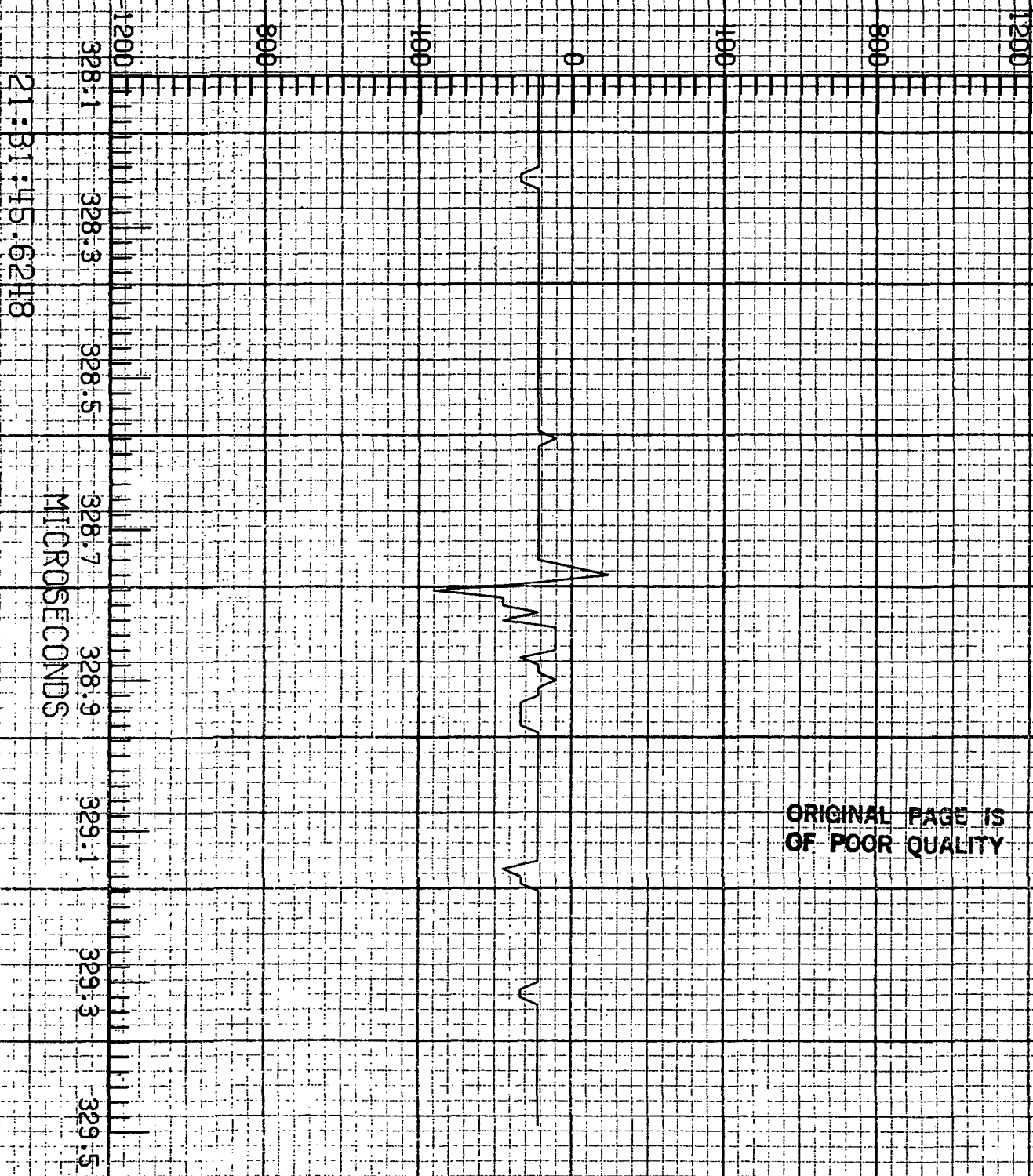
F106 LIGHTNING/TK.10/M.THOMAS

TEST NO. 83-02

RUN NO. 2

N-002

B DOT L T/S



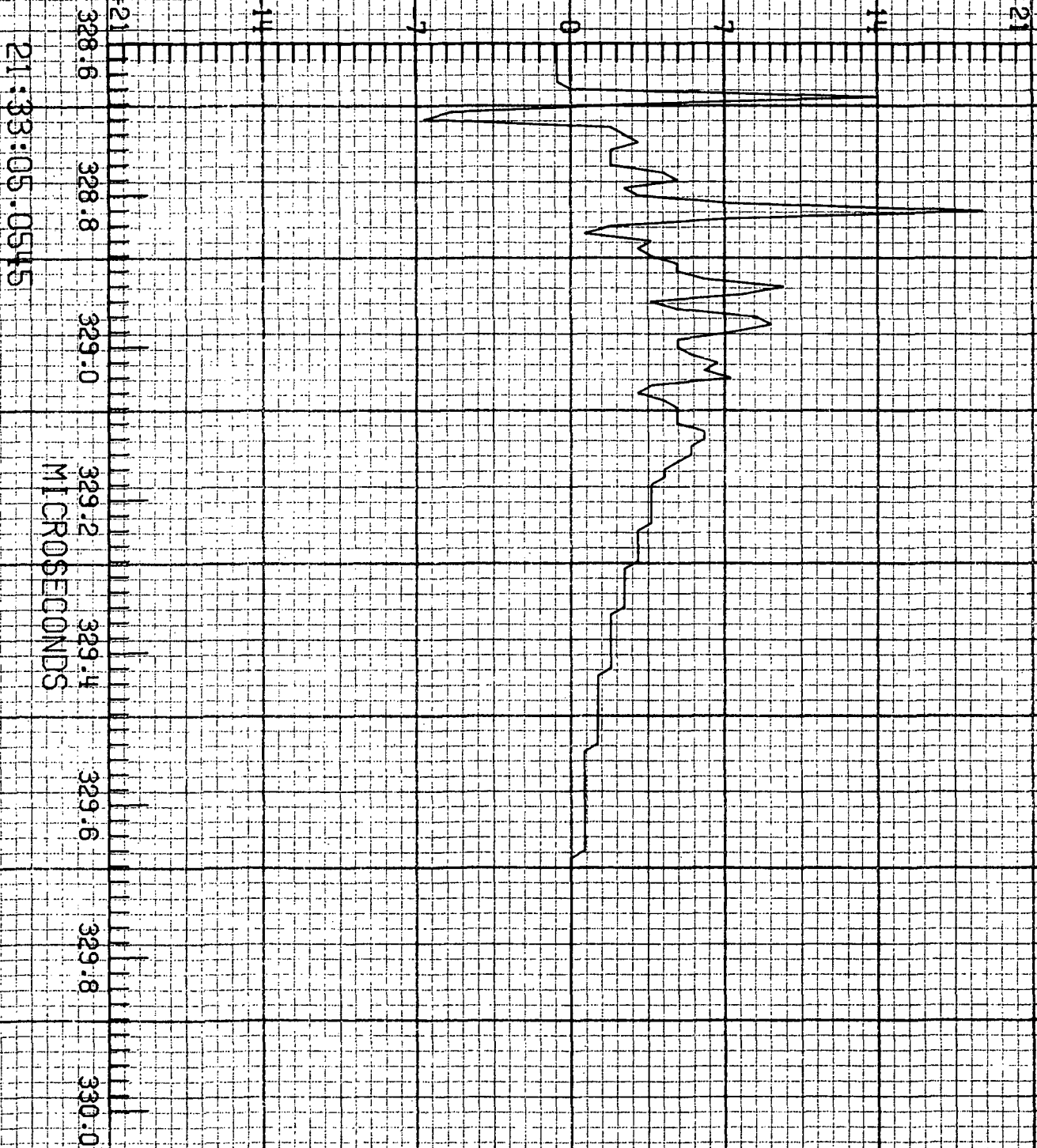
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F106 LIGHTNING TK 8/THOMAS  
RUN NO. 3 S-001

TEST NO. 83-02

D DOT FWD  $A/m^2$



F106 LIGHTNING/TK.10/M.THOMAS

TEST NO. 83-02

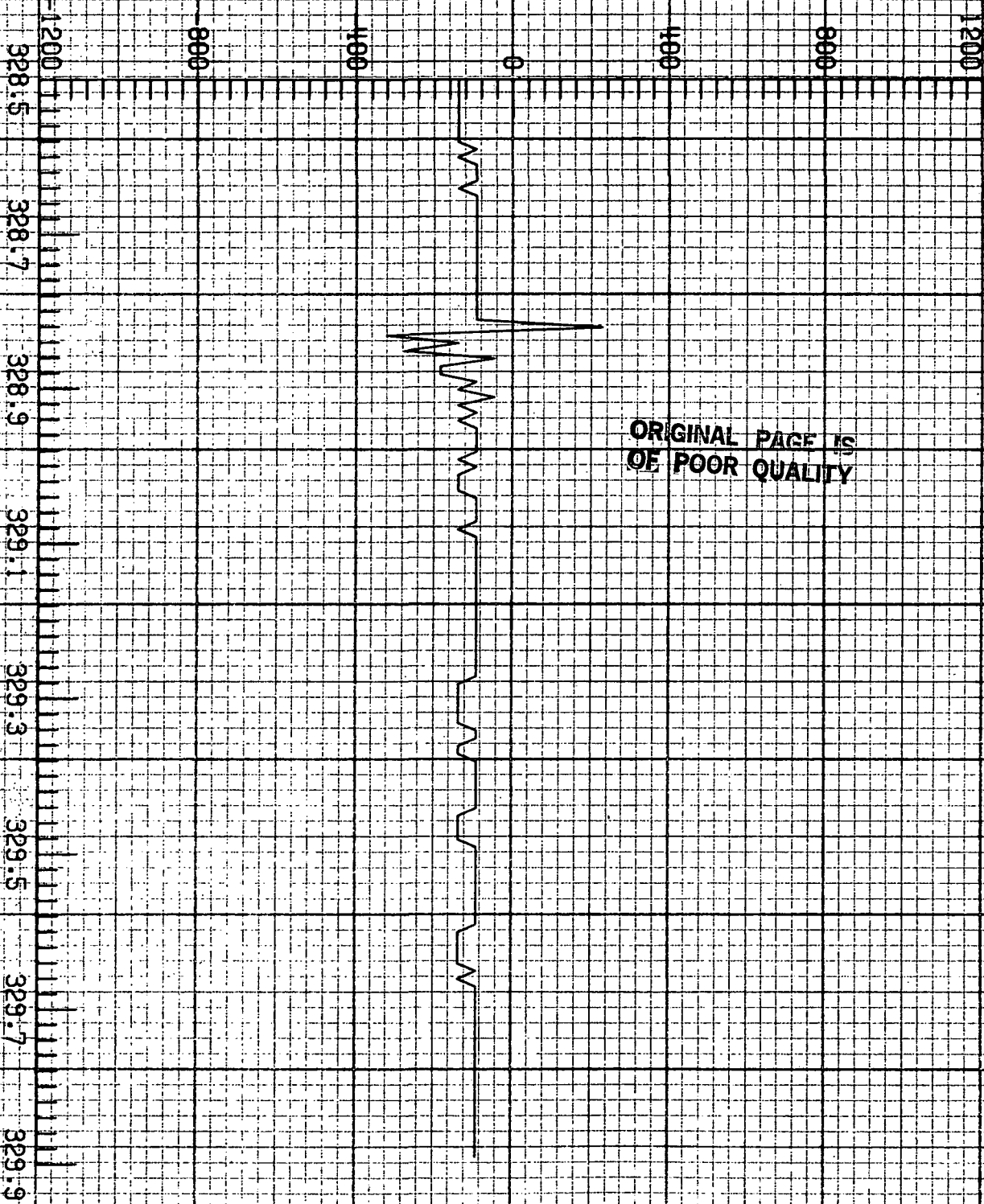
RUN NO. 3

S-001

B DOT 1 T/S

21:33:04.8062

MICROSECONDS



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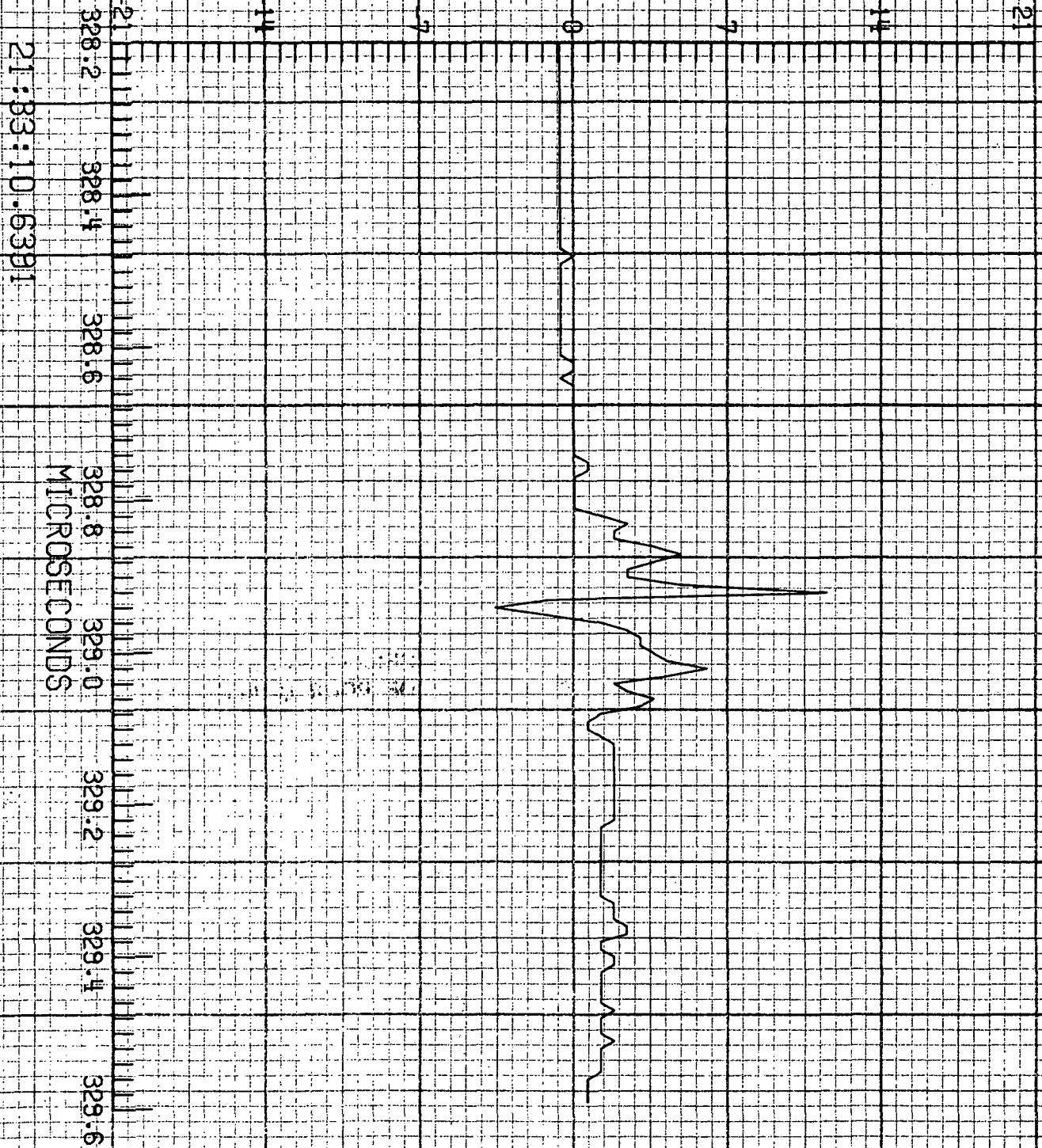


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F106 LIGHTNING TK 8/THOMAS  
RUN NO. 1 S-002

TEST NO. 83-02

D DOT FWD  $A/m^2$



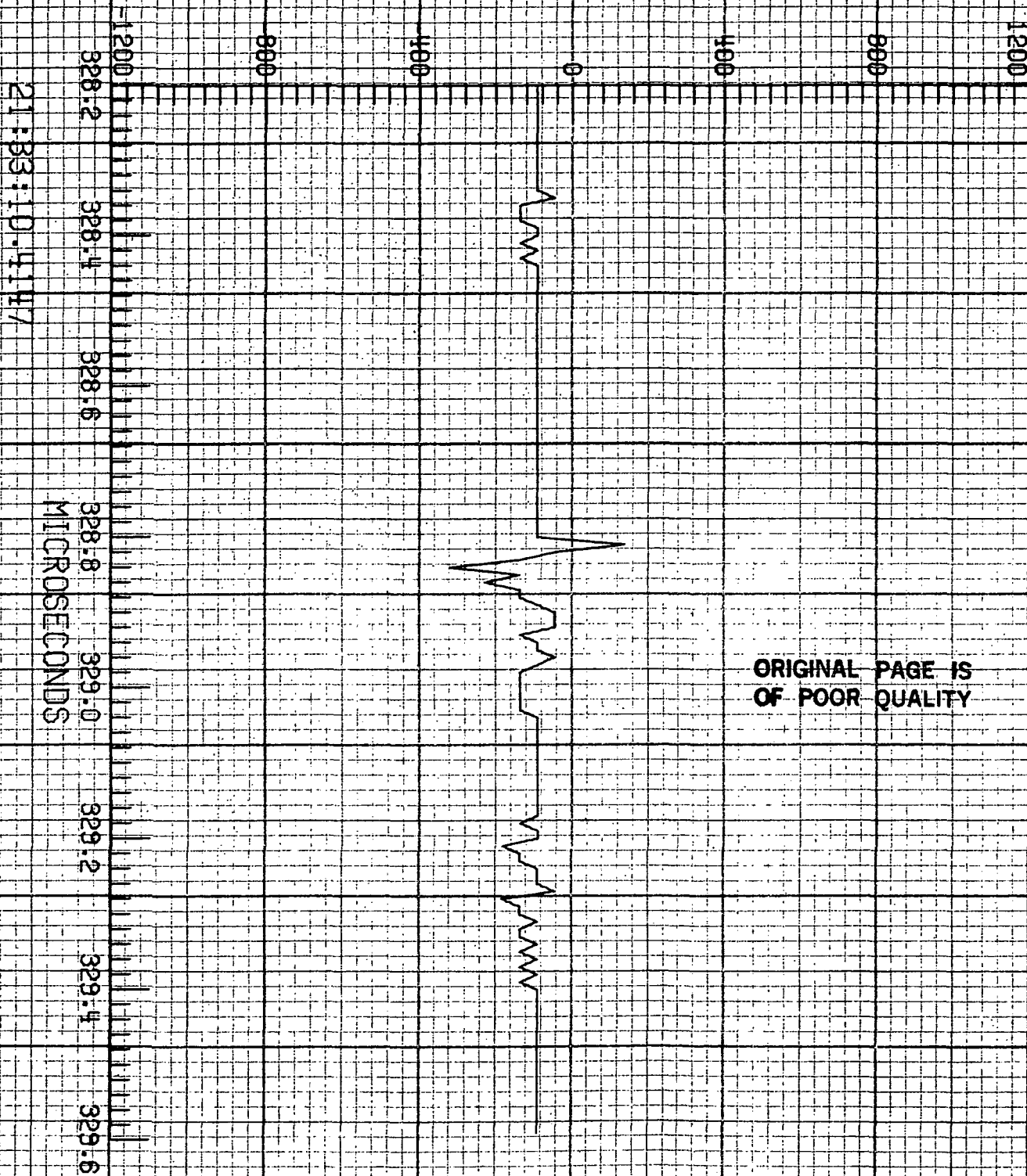
F106 LIGHTNING/TK.10/M.THOMAS

TEST NO. 83-02

RUN NO. #

S-002

B DOT L T/S

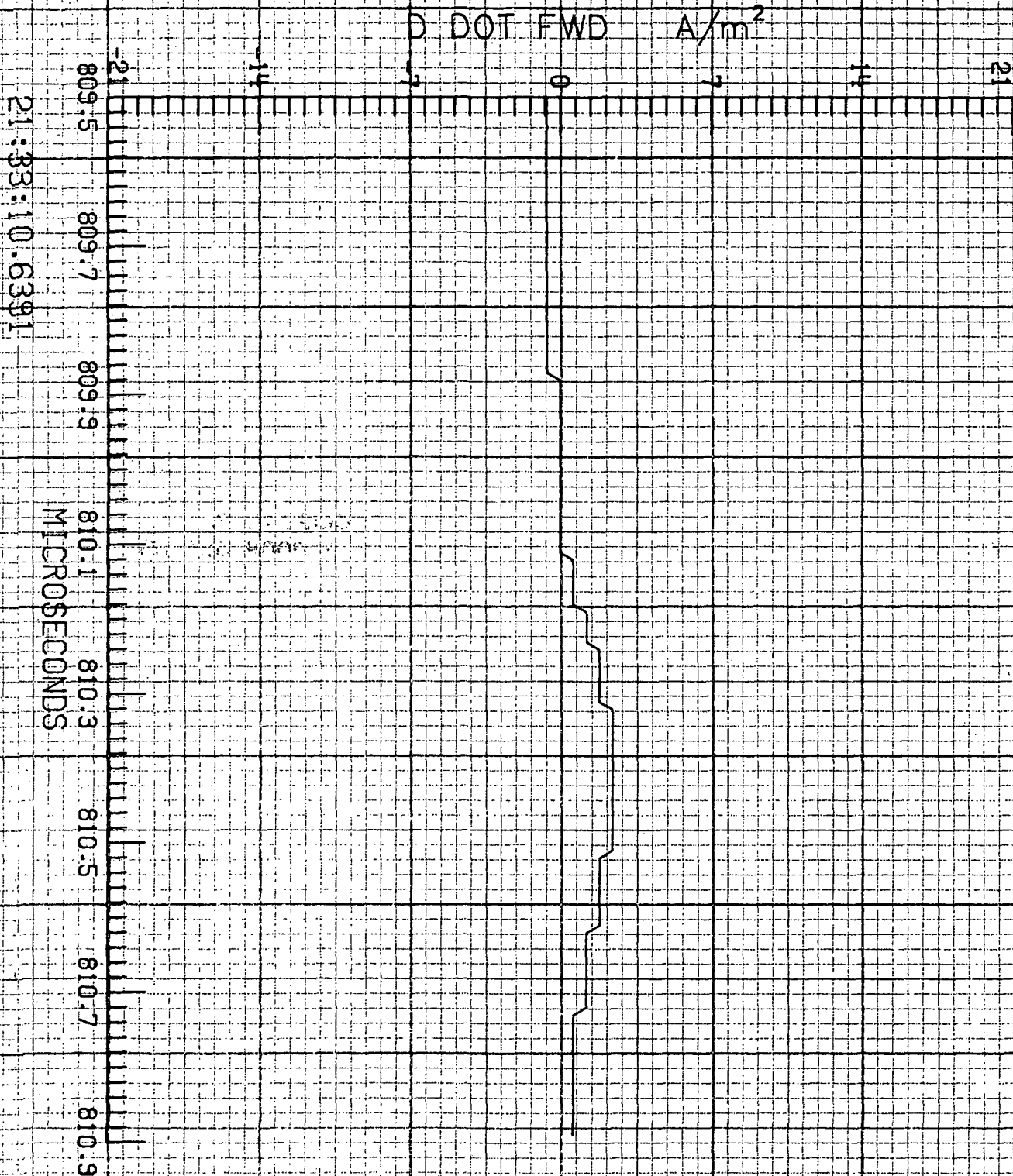


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F106 LIGHTNING TK 8/THOMAS  
RUN NO. 4 S-002

TEST NO. 83-029



F106 LIGHTNING/TK.10/M.THOMAS

TEST NO. 83-02

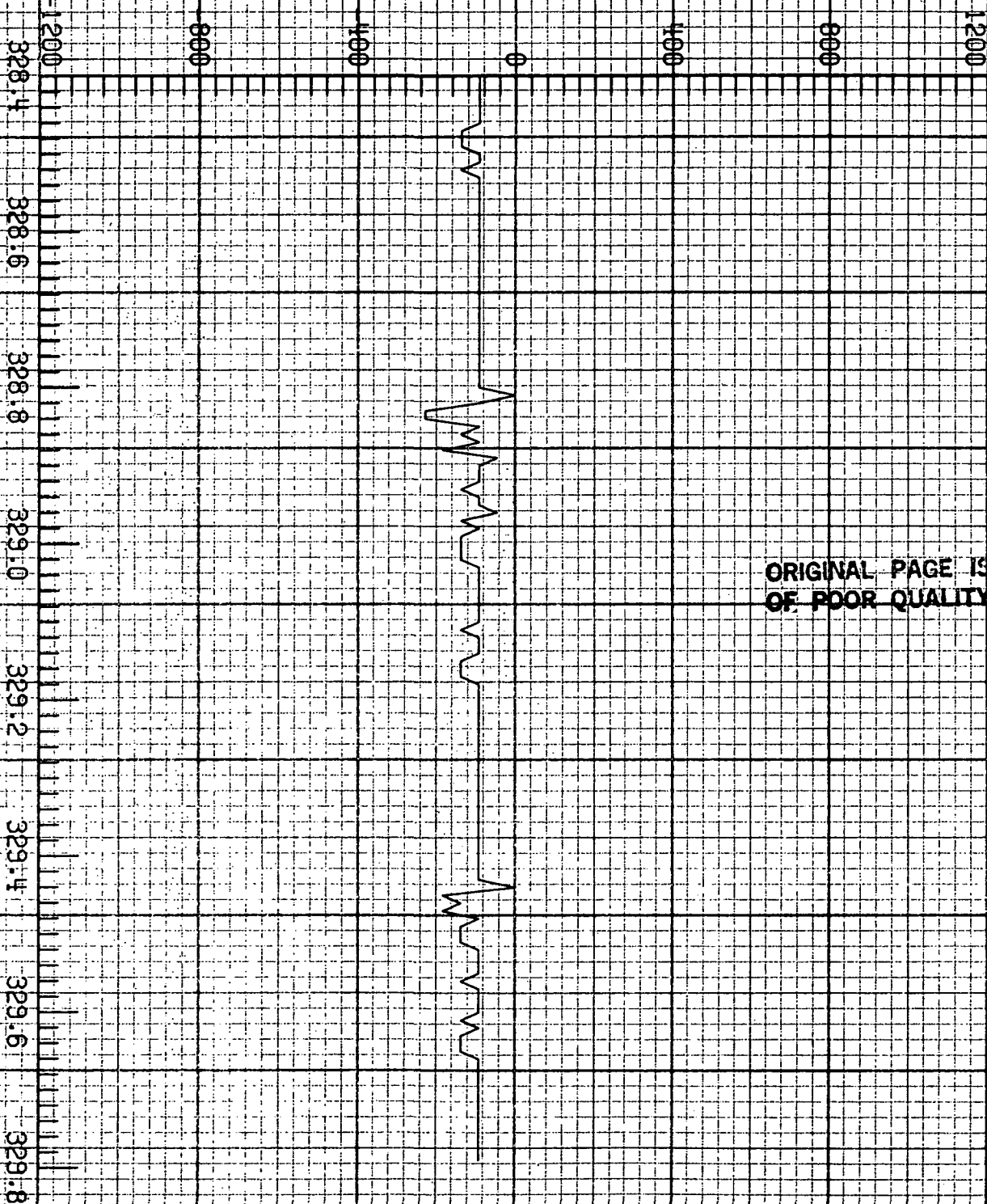
RUN NO. 5

S-003

B DOT L T/S

21:33:17.0851

MICROSECONDS



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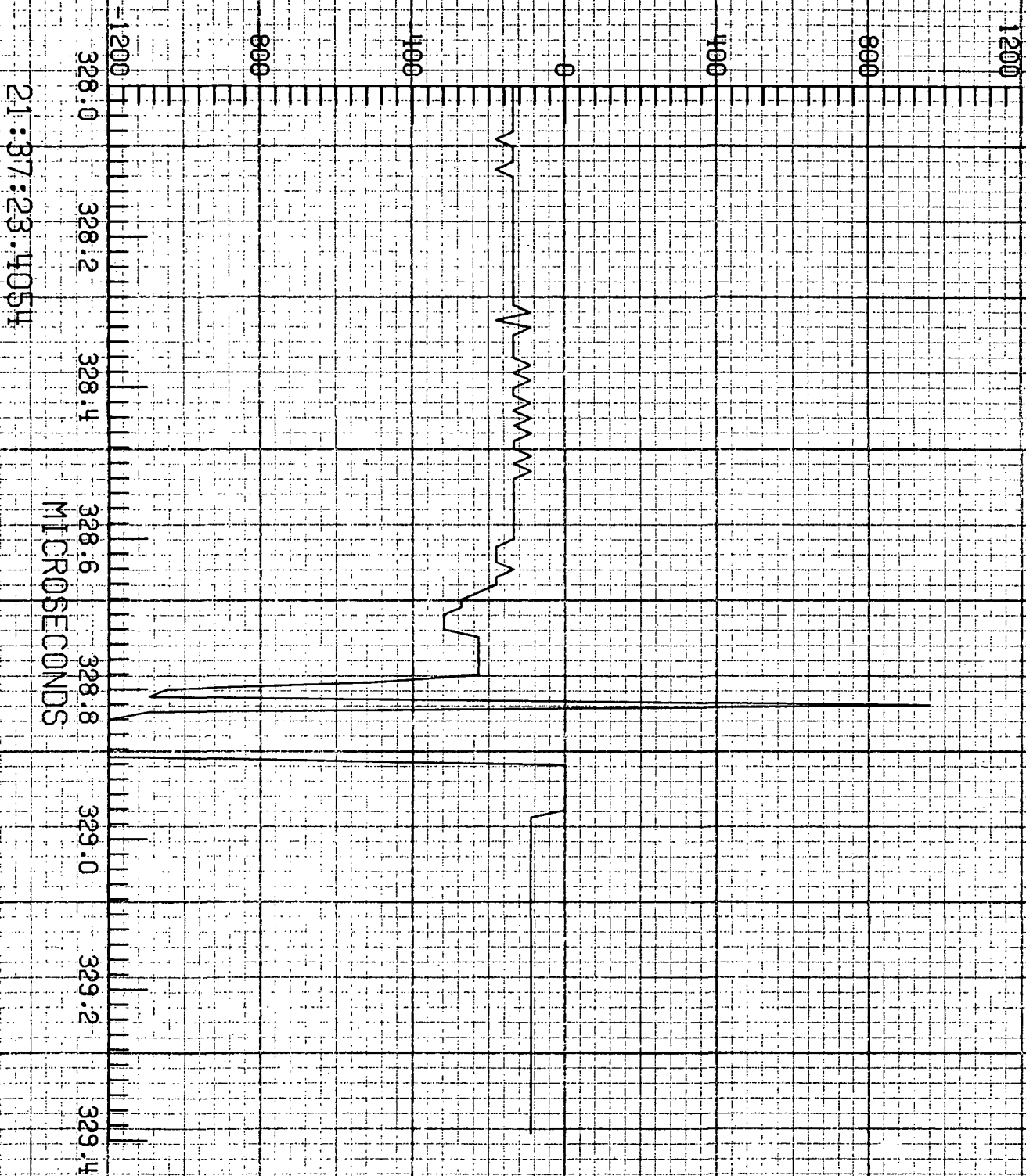
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TEST NO. 83-029

RUN NO. 6

S-004

B DOT II T/S

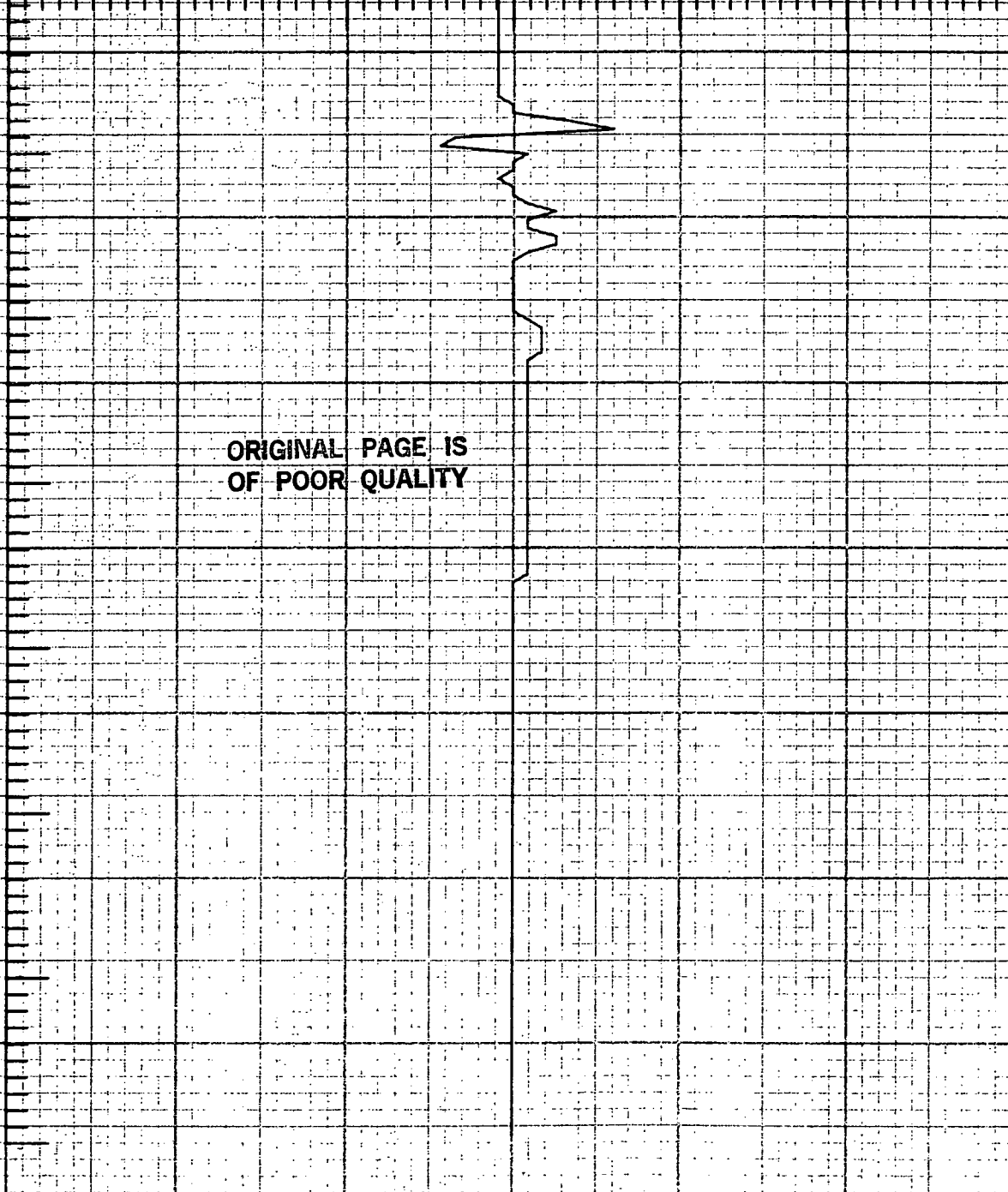




F106 LIGHTNING TK 8/THOMAS  
RUN NO. 7 N-003

TEST NO. 83-02

D DOT FWD A/m<sup>2</sup>



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F106 LIGHTNING/TK.10/M.THOMAS

TEST NO. 83-02

RUN NO. 7

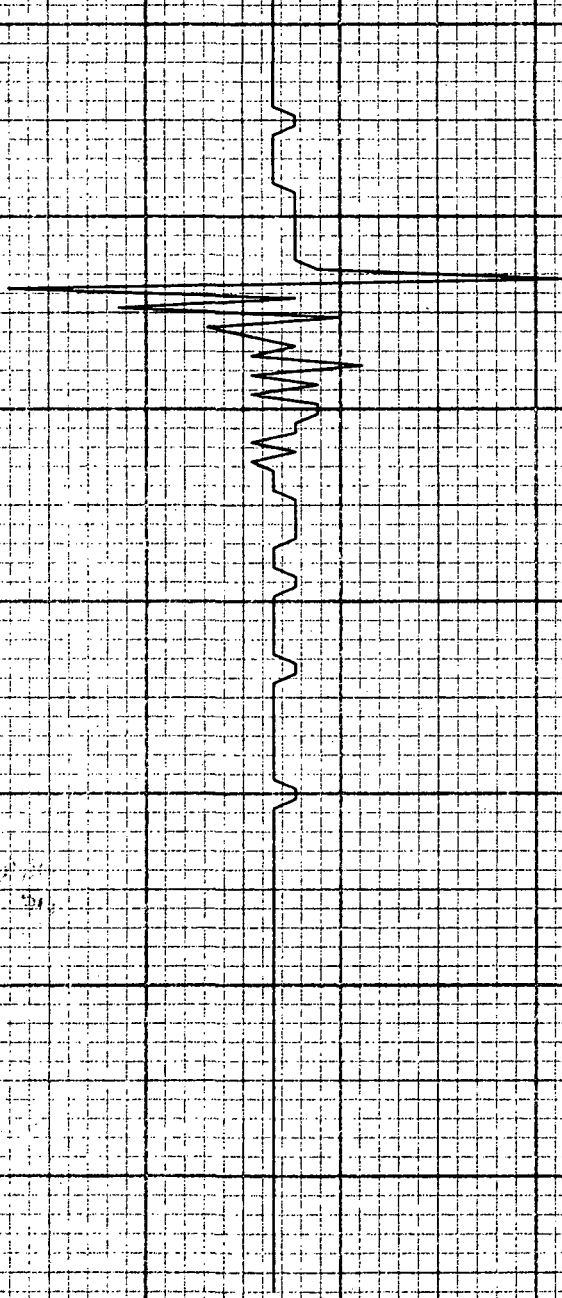
N-003

B DOT L T/S

21:38:22.2961

MICROSECONDS

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F106 LIGHTNING/TK.10/M.THOMAS

TEST NO. 83-029

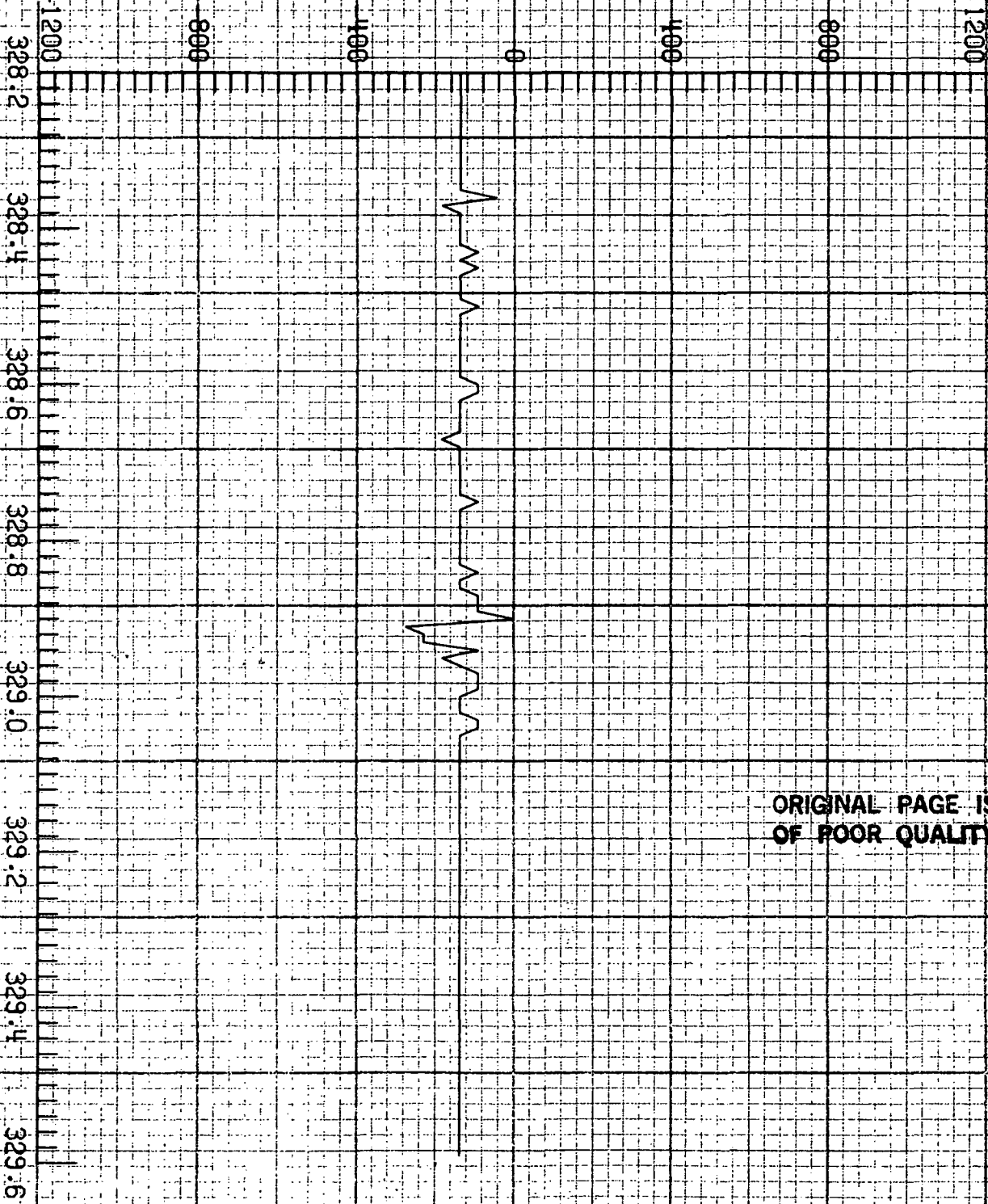
RUN NO. 8

N=004

B DOT L T/S

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MICROSECONDS

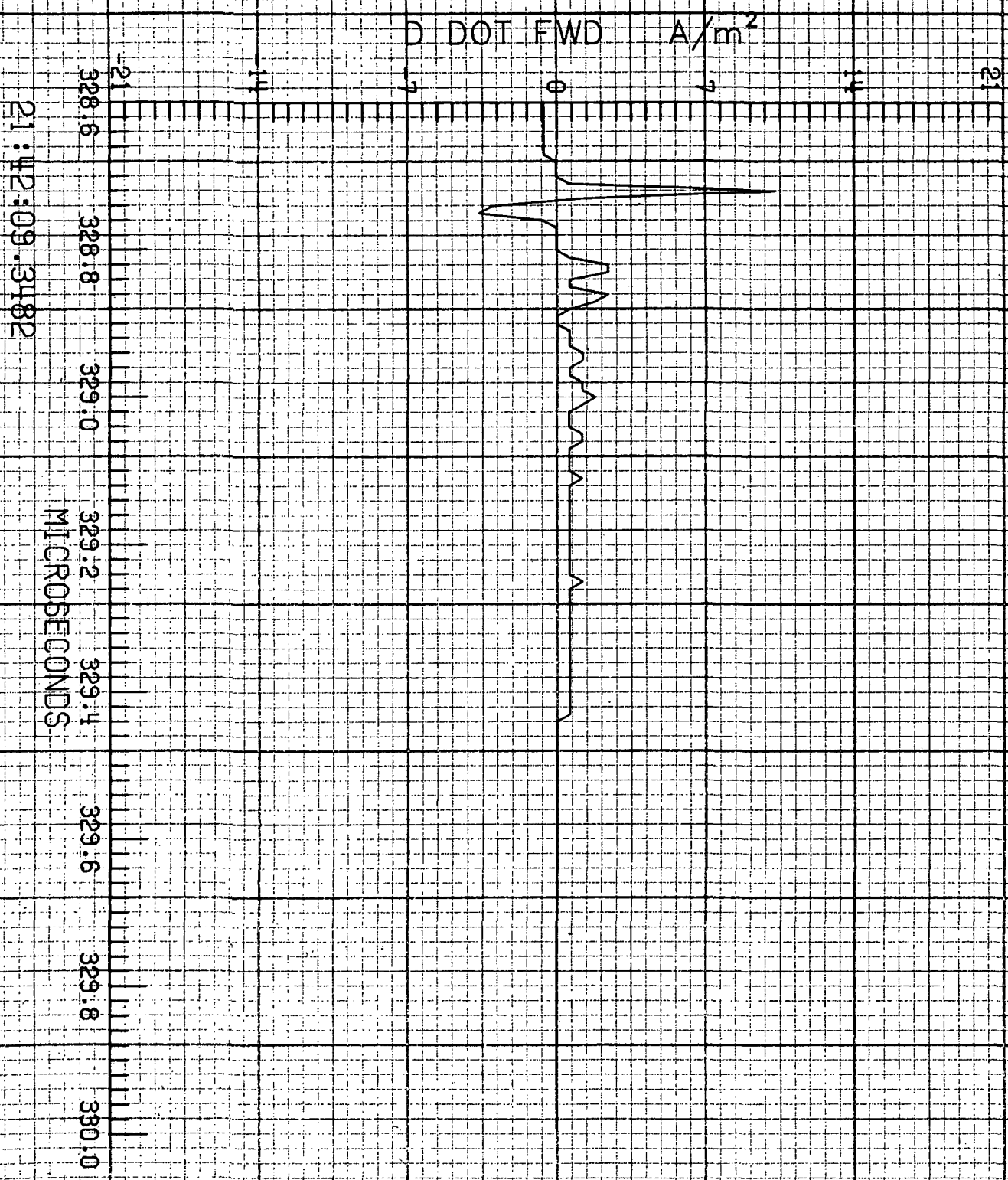




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F106 LIGHTNING TK 8/THOMAS  
RUN NO. 9 S-005

TEST NO. 83-028



106 LIGHTNING/TK.10/M.THOMAS

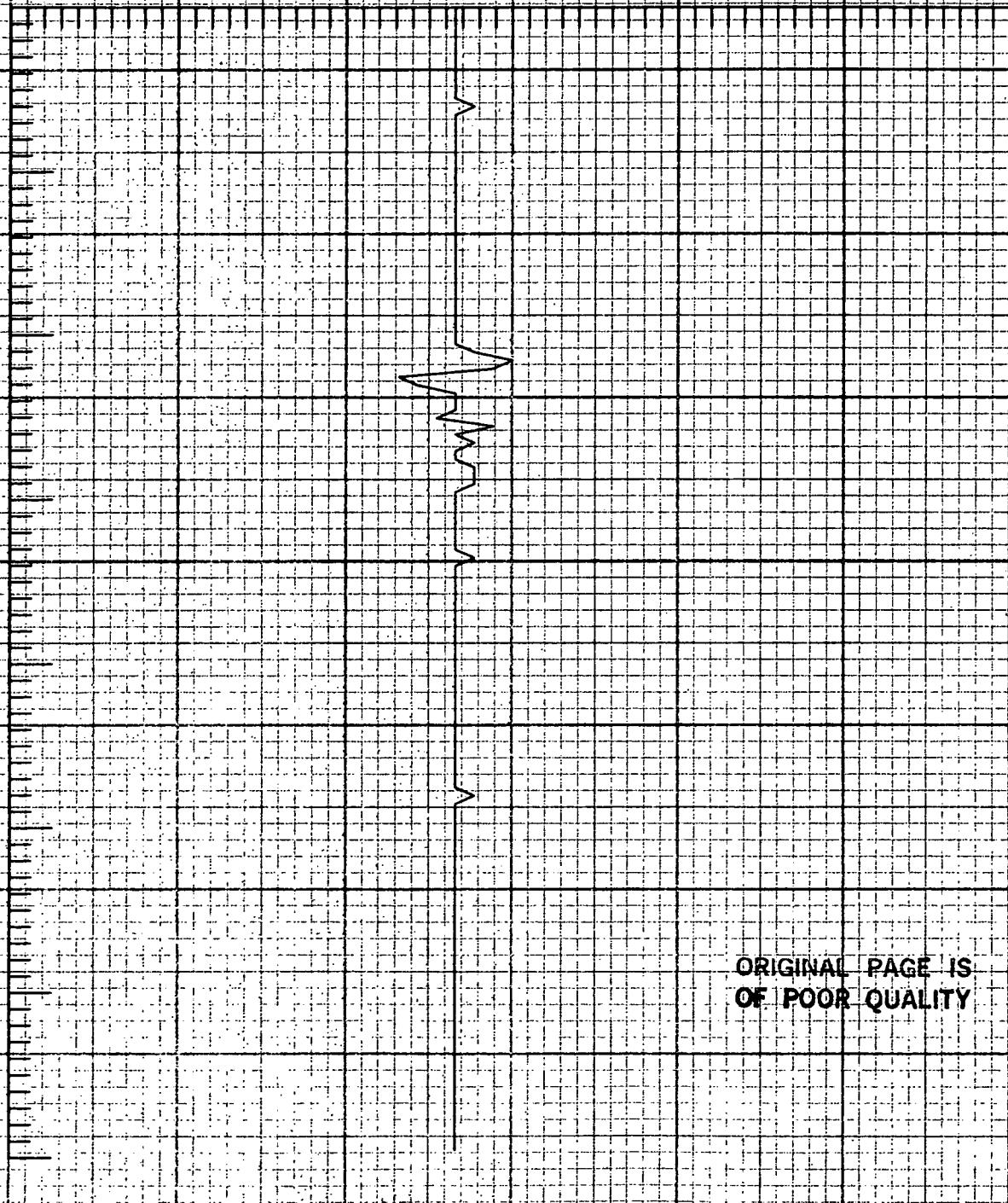
TEST NO. 83-025

RUN NO. 9

S-005

B DOT L T/S

-1200 800 400 0 400 800 1200



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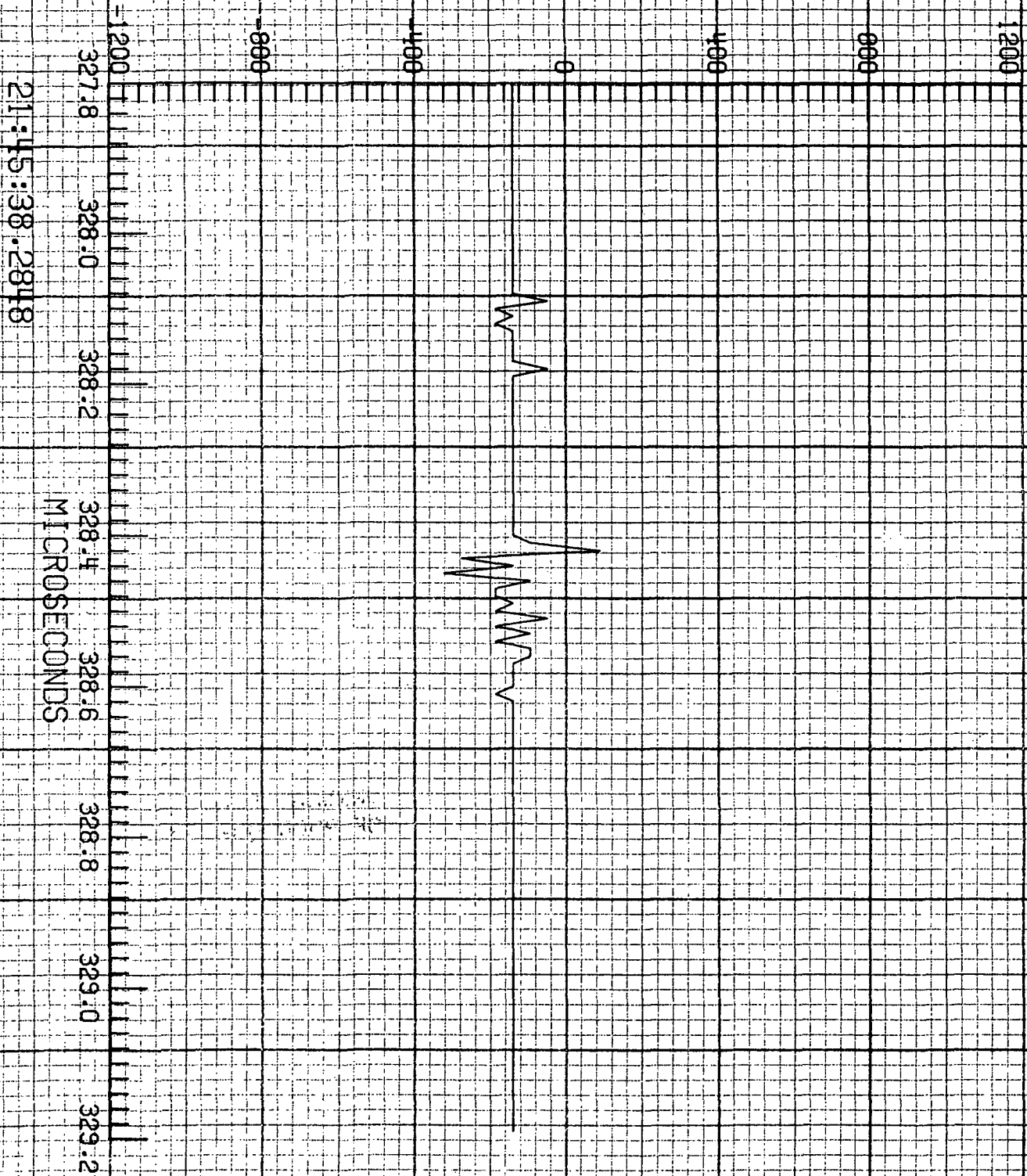
F106 LIGHTNING/TK.10/M.THOMAS

TEST NO. 83-02

RUN NO. 10

N-005

B DOT L T/S



F106 LIGHTNING/TK.10/M.THOMAS

TEST NO. 83-02

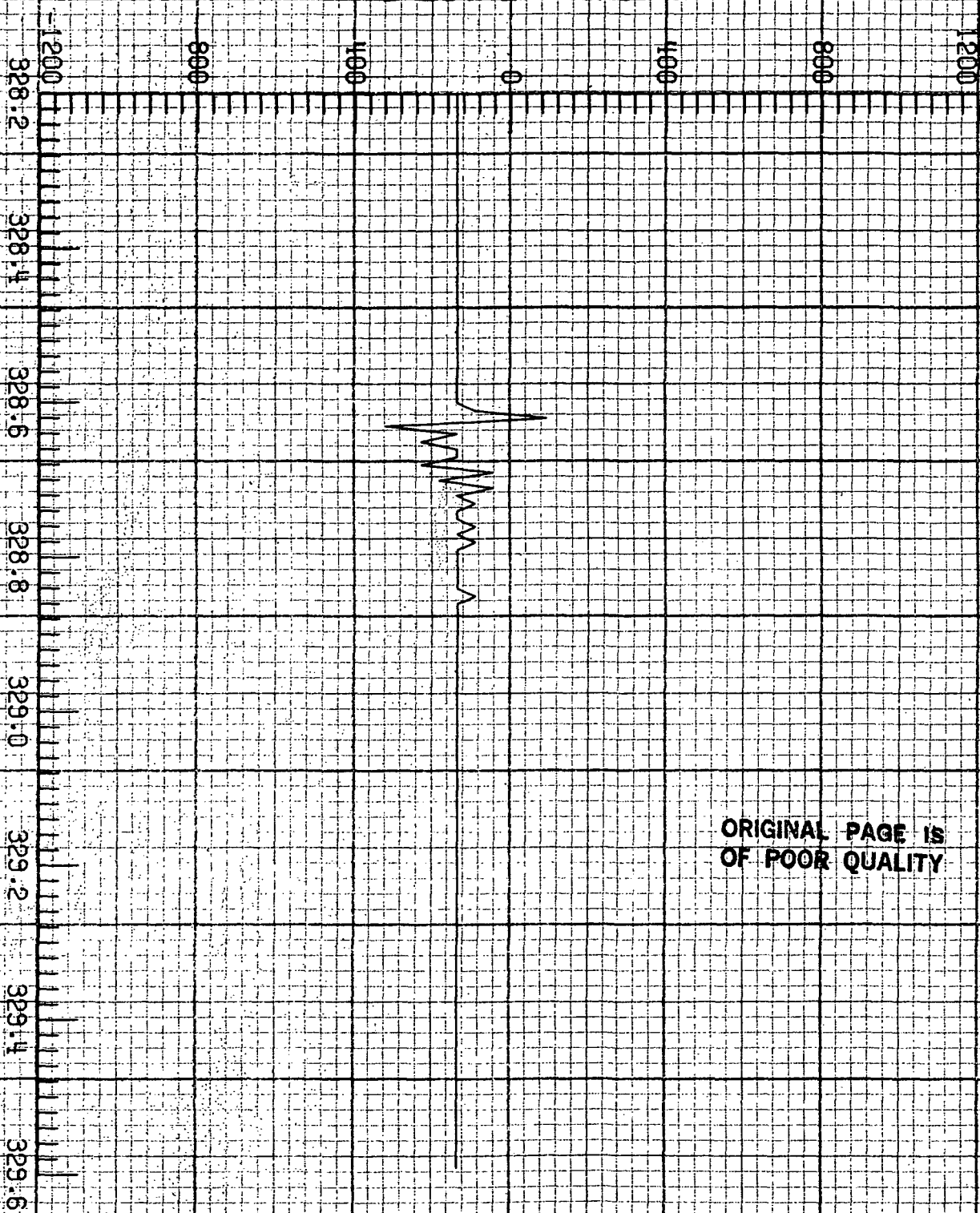
RUN NO. 11

N-006

B DOT I I/S

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MICROSECONDS



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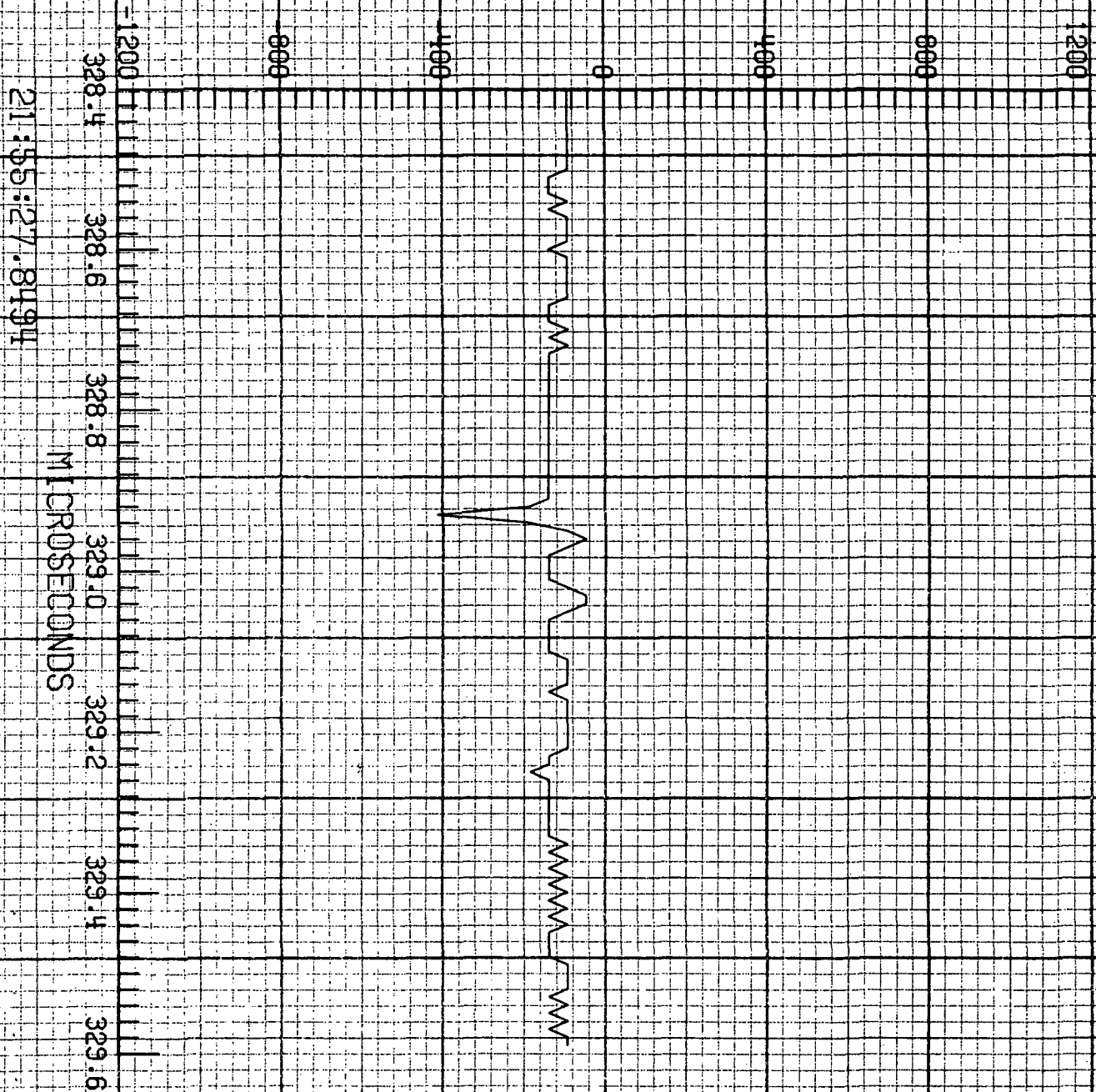
F106 LIGHTNING/TK-10/M.THOMAS

TEST NO. 83-02

RUN NO. 12

N-007

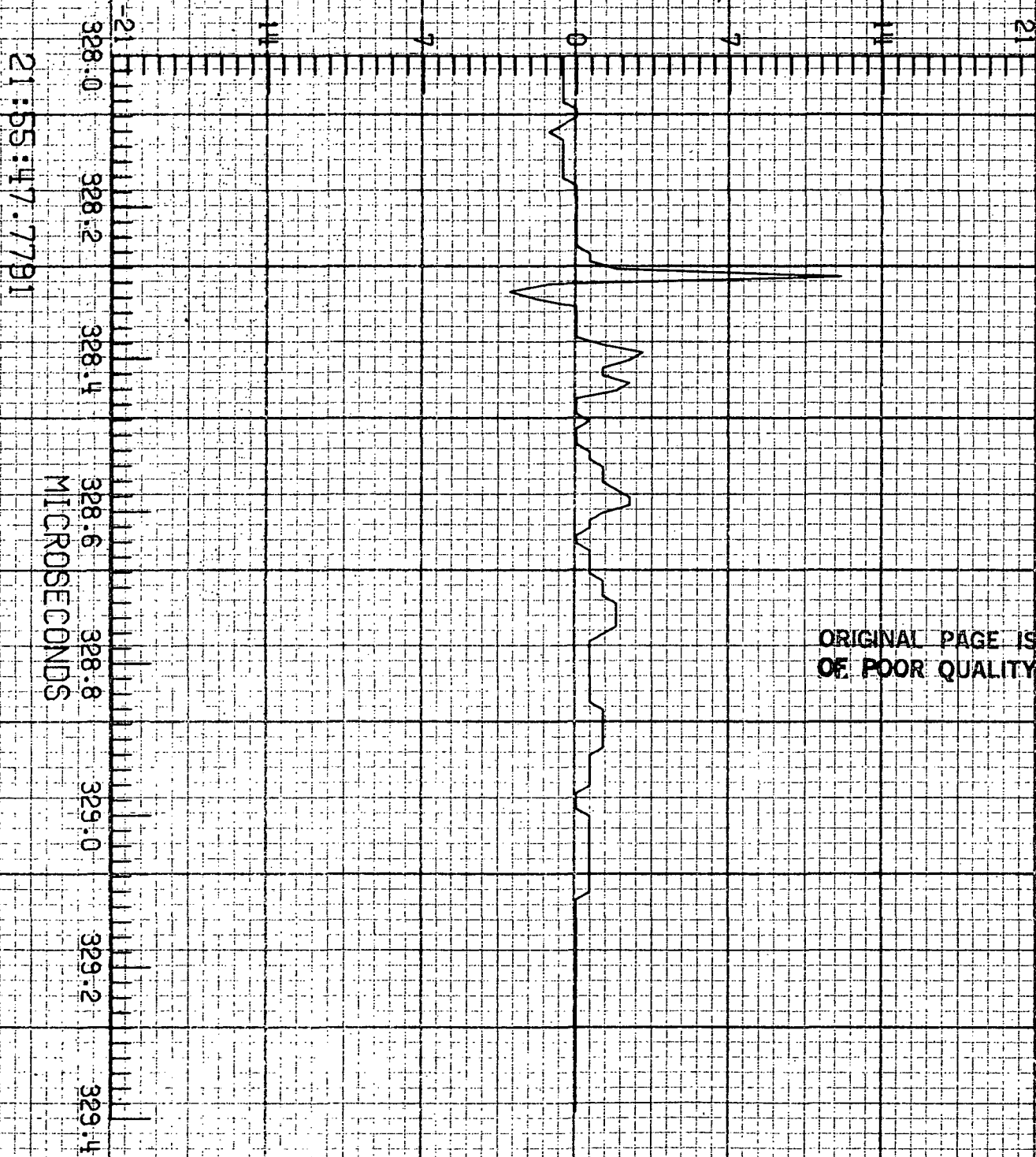
B DOT L T/S



F106 LIGHTNING TK 8/THOMAS  
RUN NO. 13 N-008

TEST NO. 83-02

D DOT FWD  $A/m^2$



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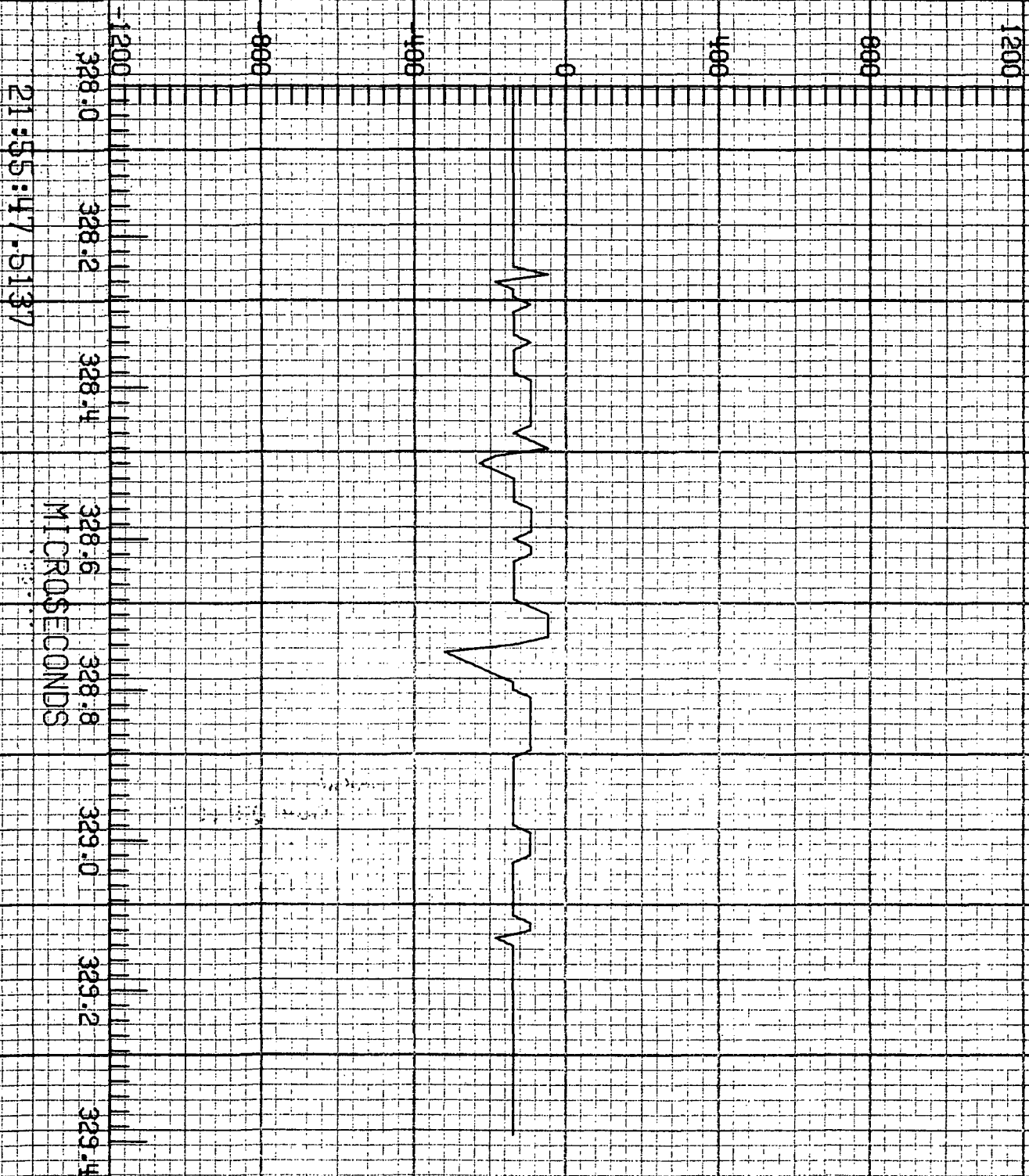
F106 LIGHTNING/TK.10/M.THOMAS

TEST NO. 83-029

RUN NO. 13

N-008

B DOT L T/S



F106 LIGHTNING/TK.10/M.THOMAS

TEST NO. 83-029

RUN NO. 14

S=007

B DOT I T/S

22:00:31.5785

MICROSECONDS

327.9

328.1

328.3

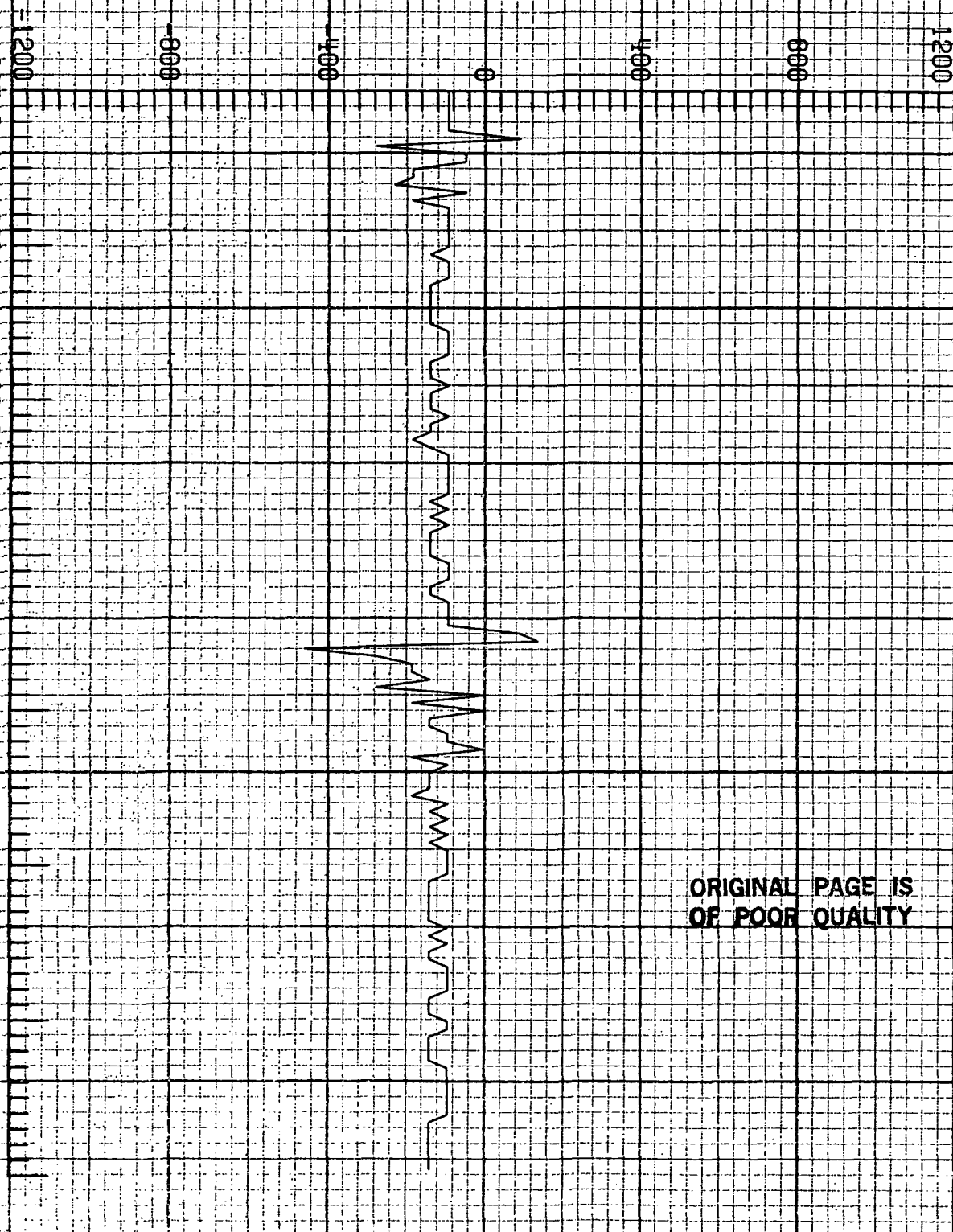
328.5

328.7

328.9

329.1

329.3



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F106 LIGHTNING/TK.10/M.THOMAS

TEST NO. 83-02

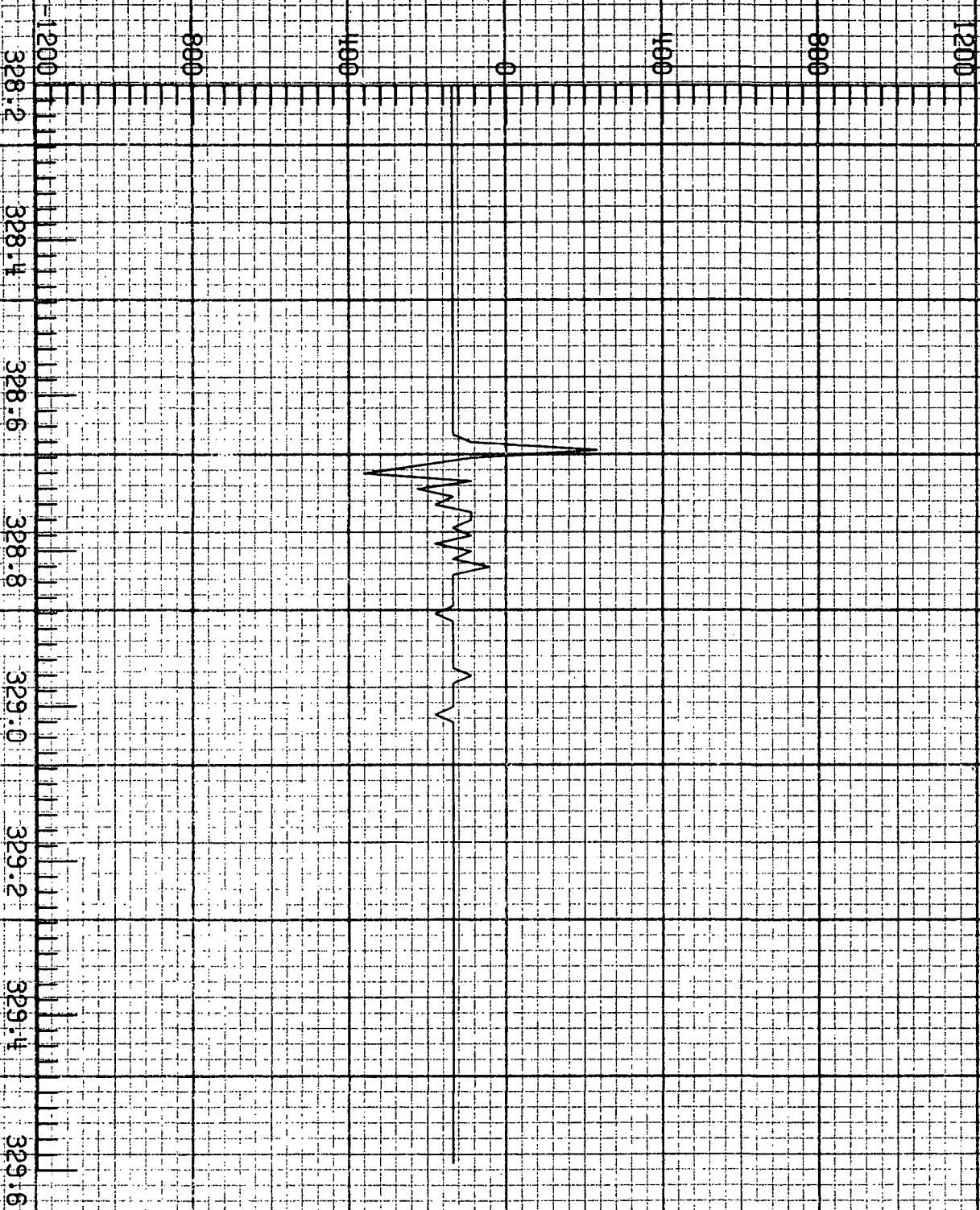
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N=009

B DOT L T/S

22:00:39.0687

MICROSECONDS



F106 LIGHTNING/TK.10/M.THOMAS

TEST NO. 83-029

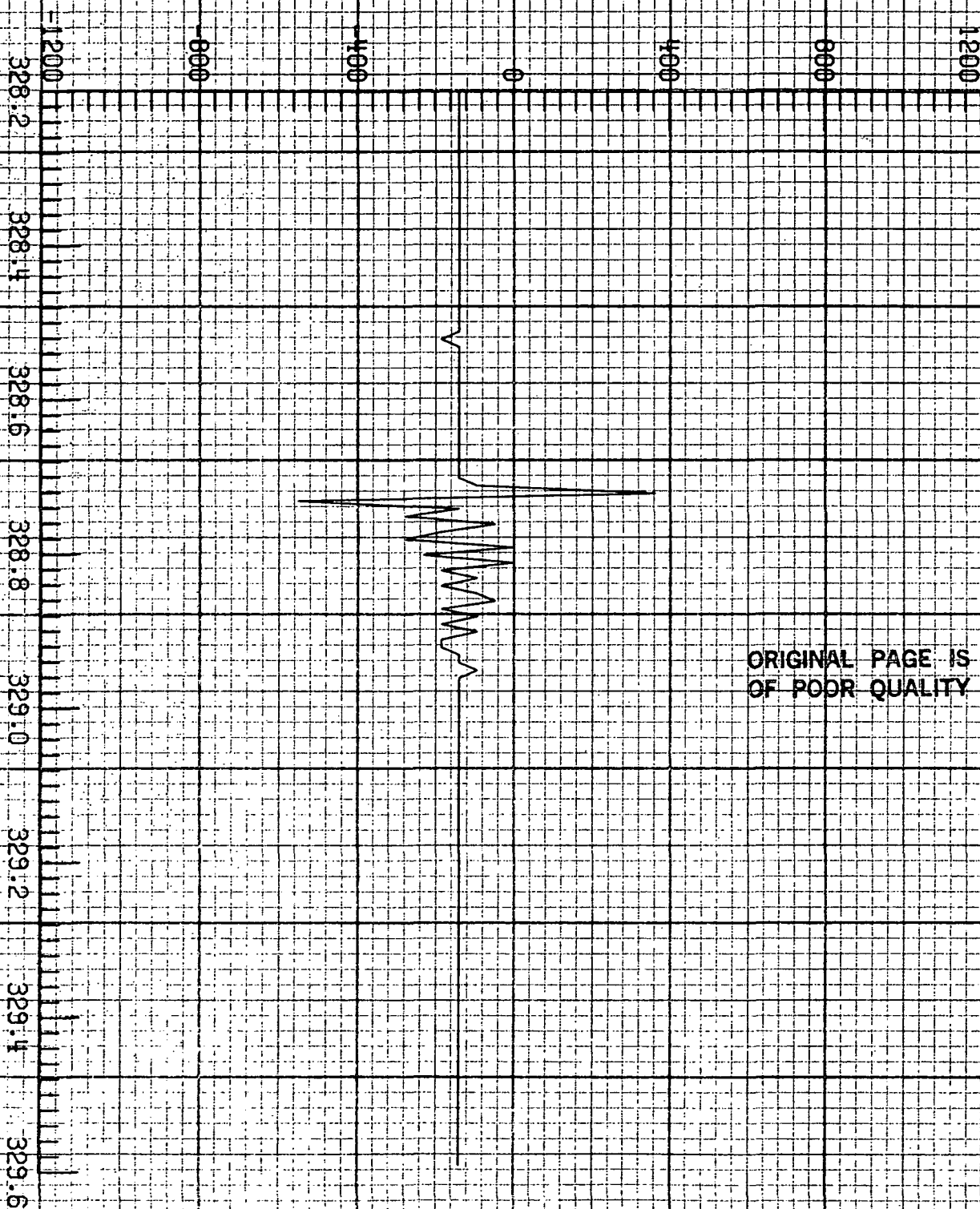
RUN NO. 16

N=010

B DOT L T/S

22:01:25.9881

MICROSECONDS



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F106 LIGHTNING TK 8/THOMAS  
RUN NO. 17 S-008

TEST NO. 83-02

D DOT FWD  $A/m^2$

22:05:22.7979

MICROSECONDS

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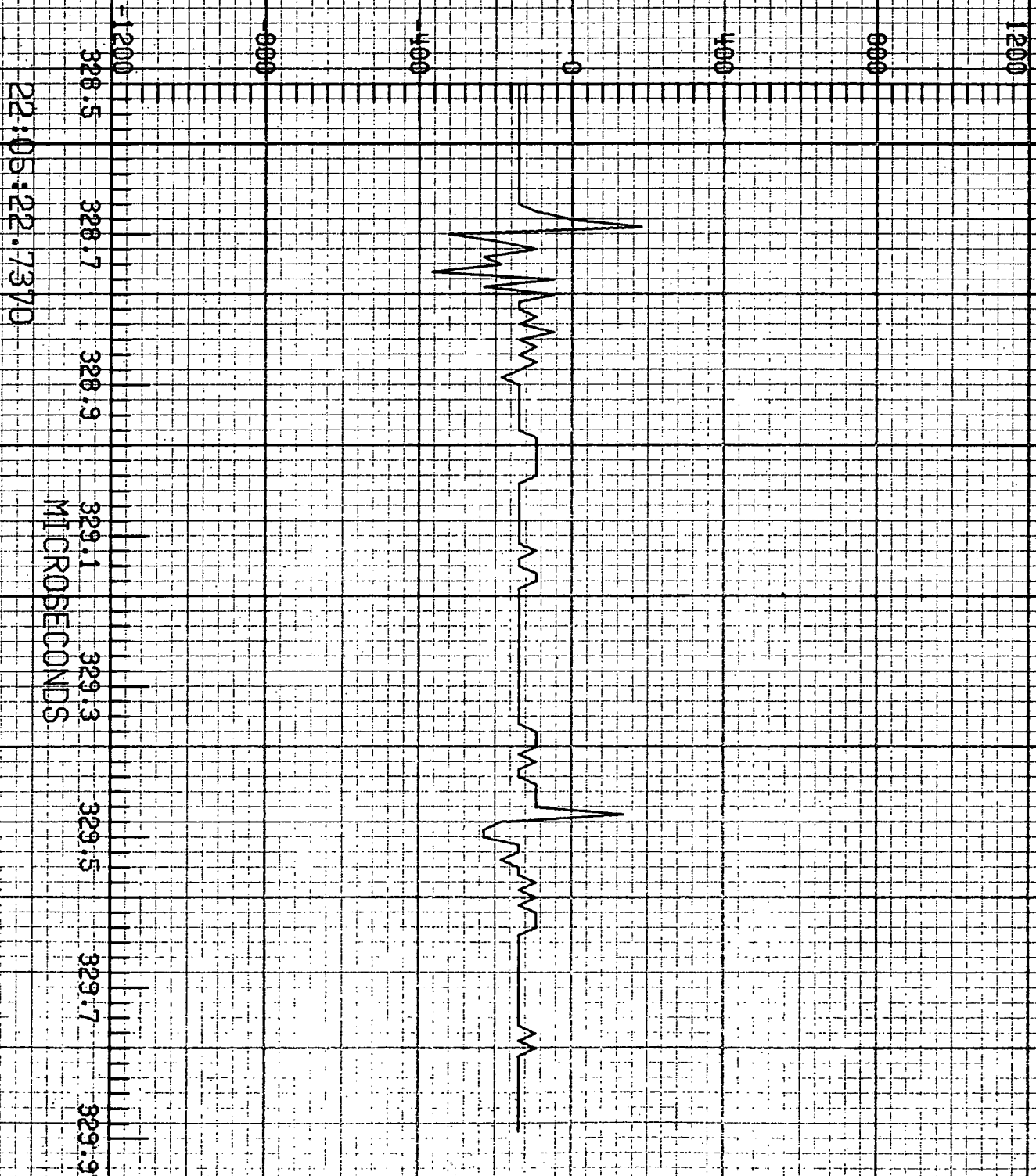
F106 LIGHTNING/TK.10/M.THOMAS

TEST NO. 83-029

RUN NO. 17

S-008

B DOT L T/S



F106 LIGHTNING/TK.10/M.THOMAS

TEST NO. 83-02

RUN NO. 18

N-011

B DOT L T/S

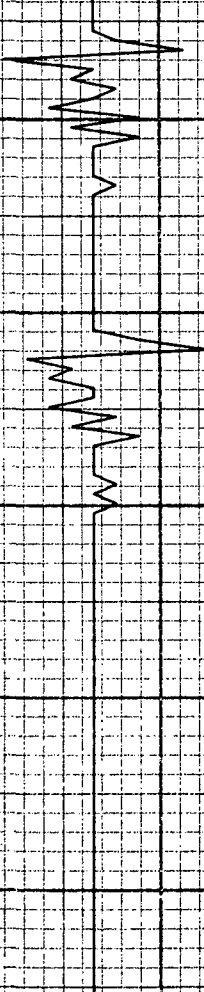
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22:05:49.3107

MICROSECONDS

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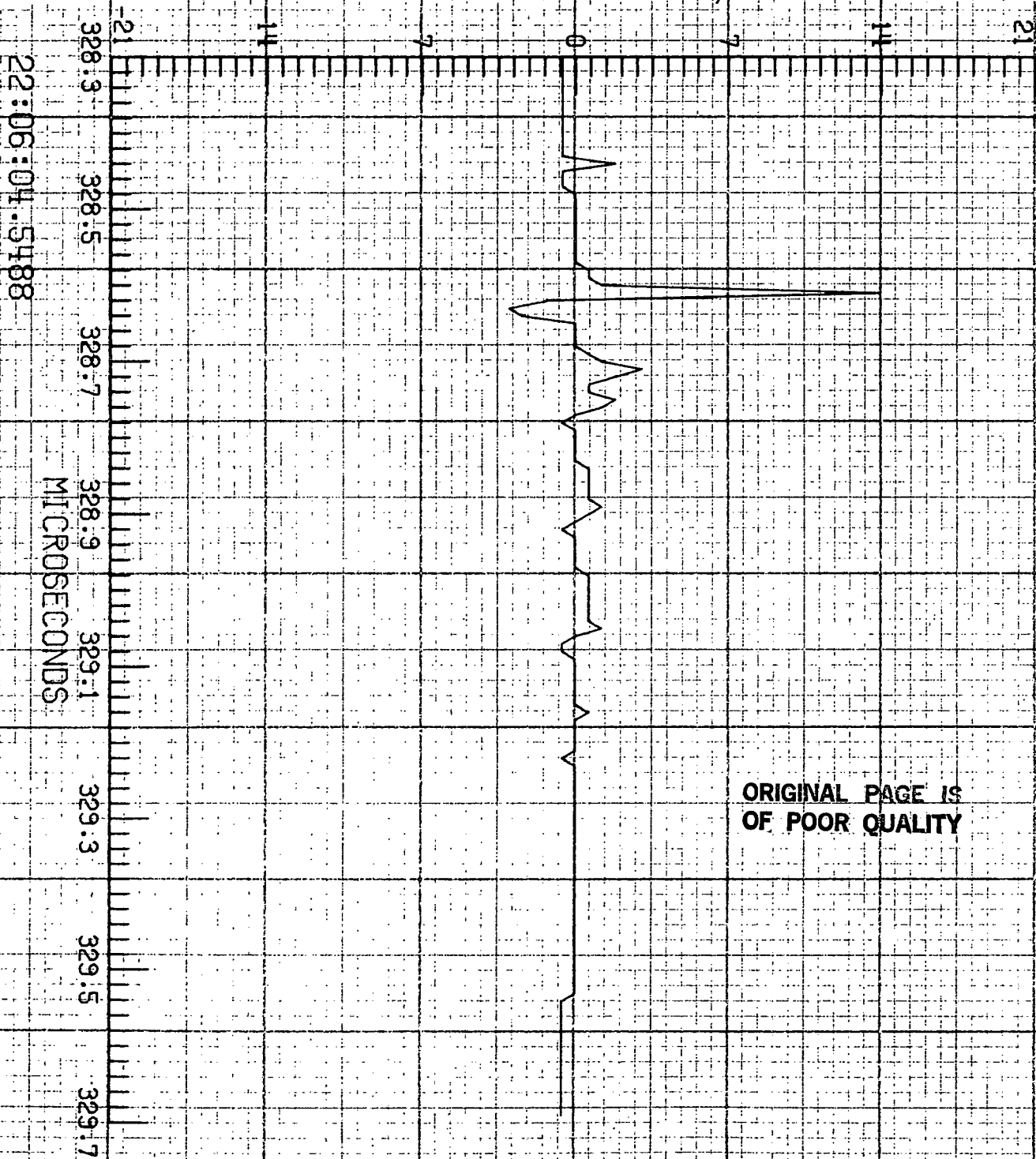




F106 LIGHTNING TK 8/THOMAS  
RUN NO. 19 S-009

TEST NO. 83-02

D DOT FWD A/m<sup>2</sup>



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F106 LIGHTNING/TK.10/M.THOMAS

TEST NO. 83-02

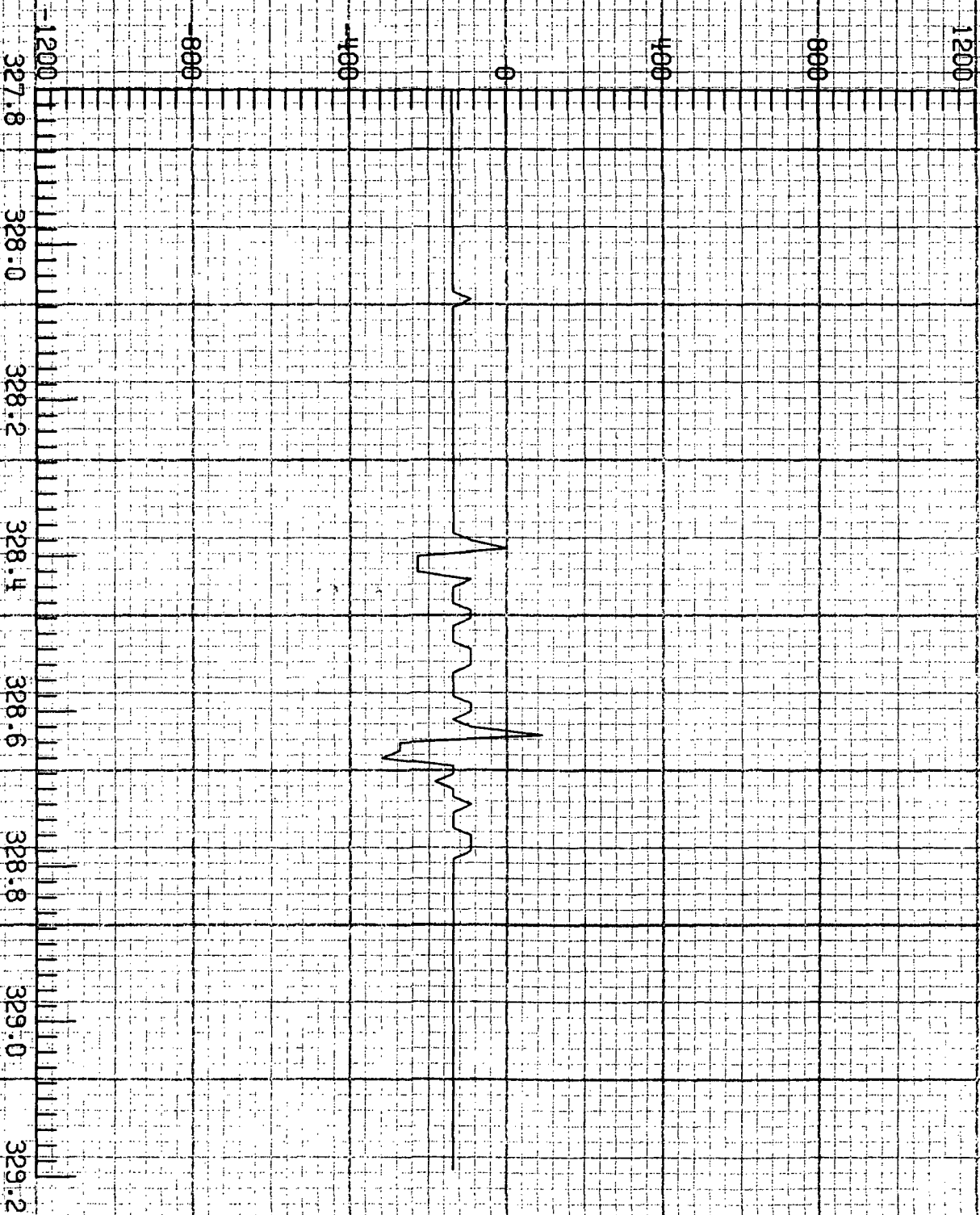
RUN NO. 19

S=009

B DOT L T/S

22:06:04.3475

MICROSECONDS



F106 LIGHTNING TK 8/THOMAS

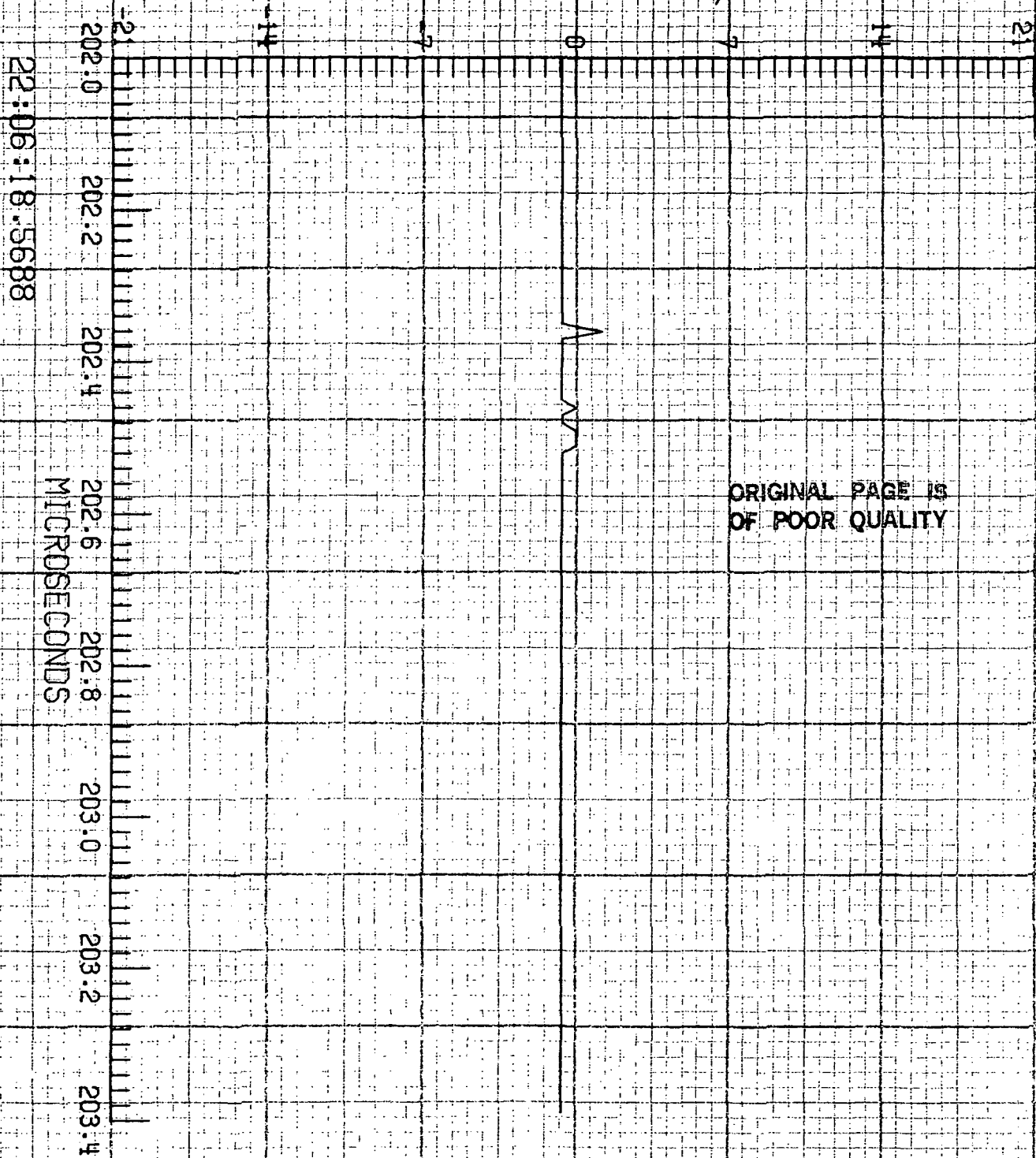
TEST NO. 83-029

RUN NO. 20

S-010

D DOT FWD

A/m<sup>2</sup>





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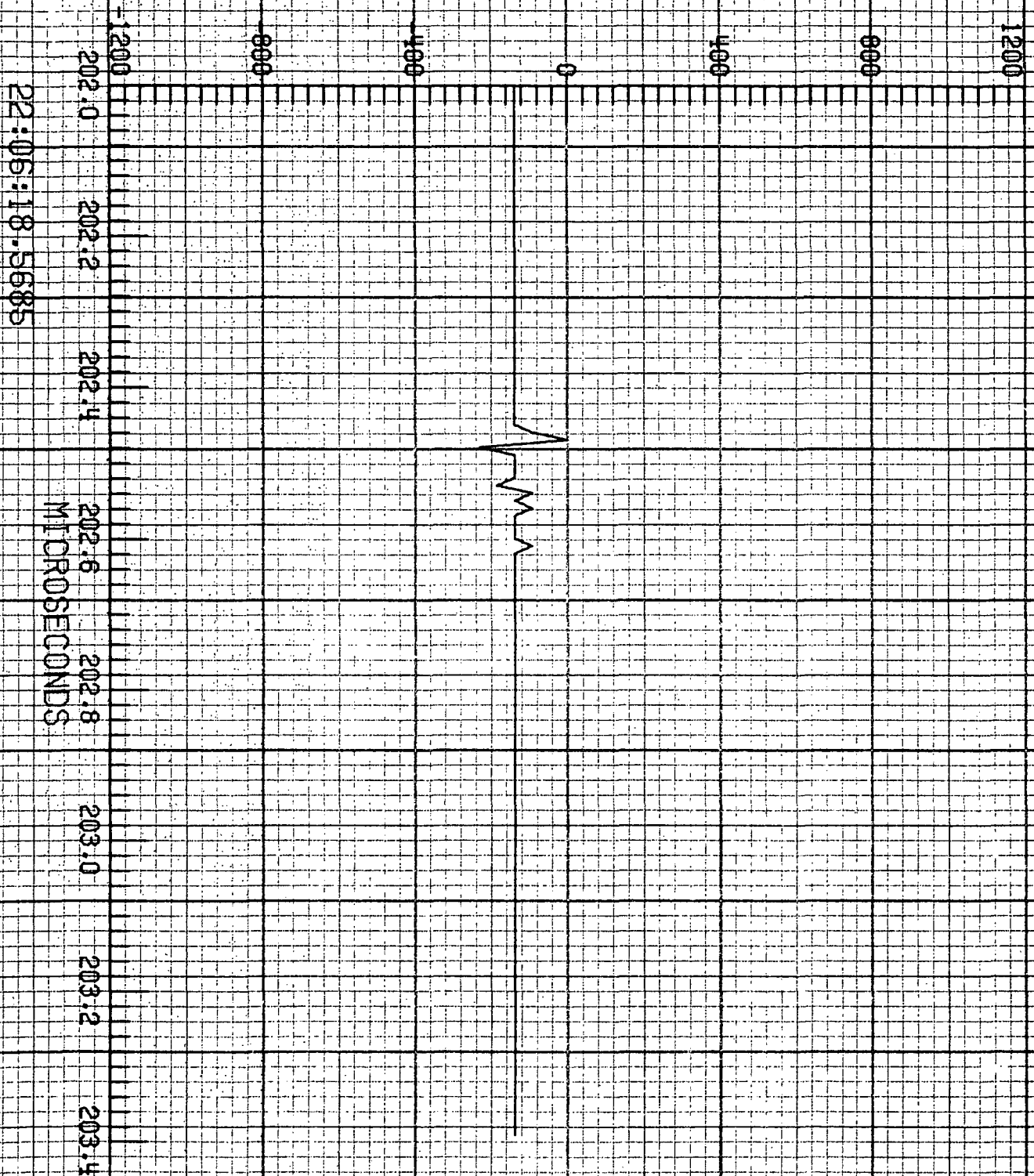
F106 LIGHTNING/TK.10/M.THOMAS

TEST NO. 83-025

RUN NO. 20

S-010

B DOT L T/S



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F106 LIGHTNING/TK.10/M.THOMAS

TEST NO. 83-029

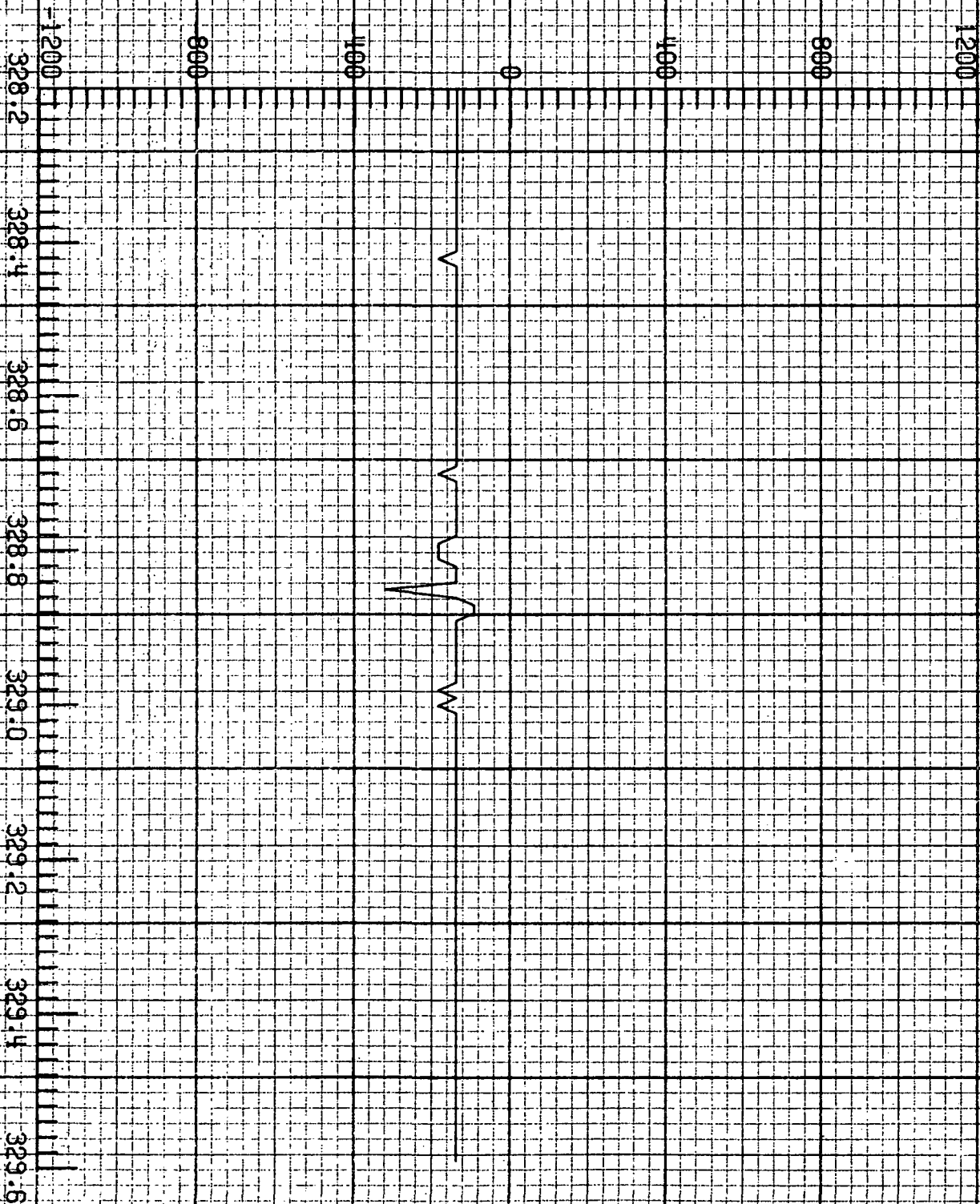
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S-010

B DOT L T/S

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MICROSECONDS



F106 LIGHTNING TK 8/THOMAS

TEST NO. 83-02

RUN NO. 20

S-010

D DOT FWD

A/m<sup>2</sup>

22:06:18.5688

MICROSECONDS

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F106 LIGHTNING/IK.10/M.THOMAS

TEST NO. 83-02

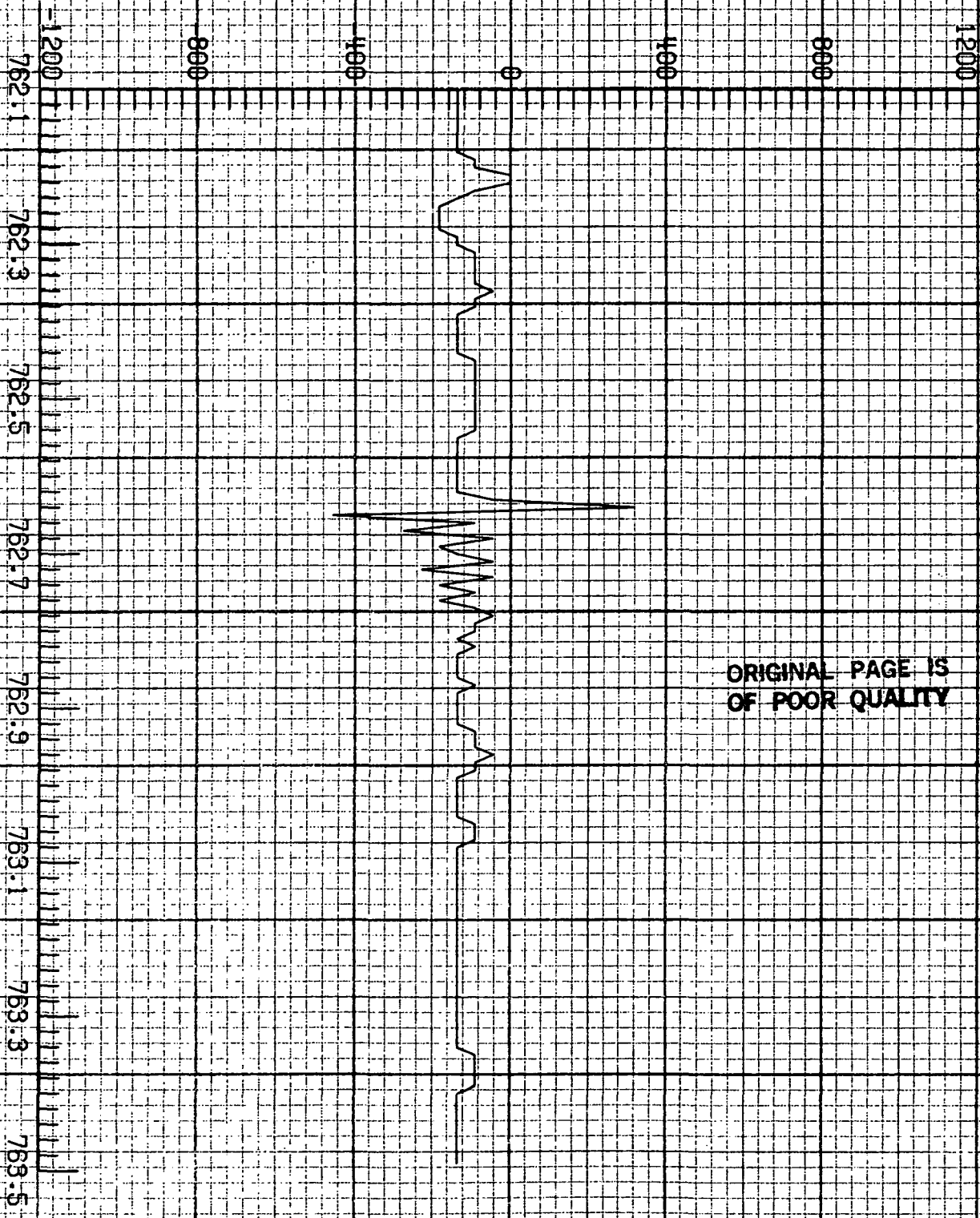
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S-010

B DOT I I/S

22:06:18.5685

MICROSECONDS



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F106 LIGHTNING/TK-10/M.THOMAS

TEST NO. 83-029

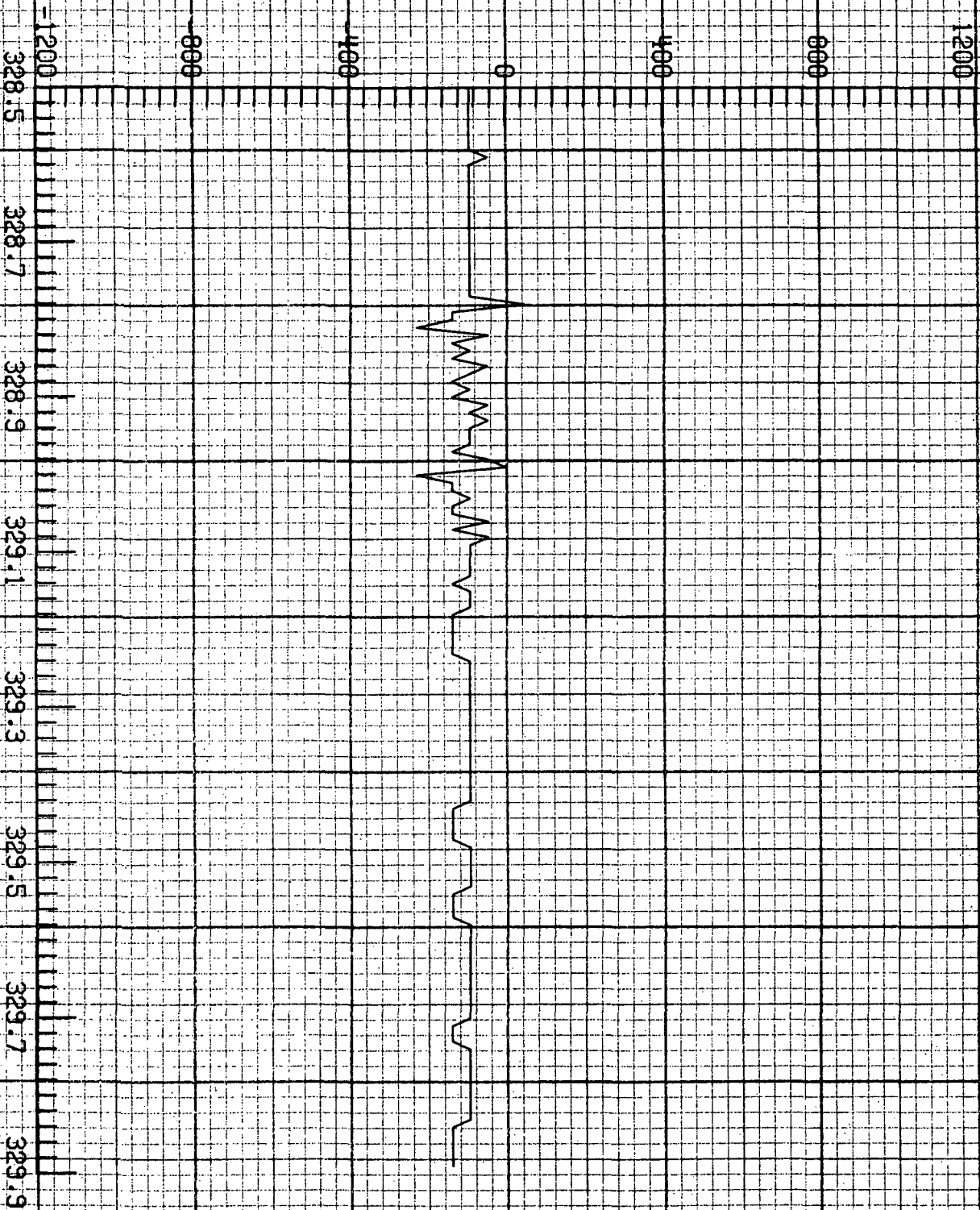
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S-011

B DOT L T/S

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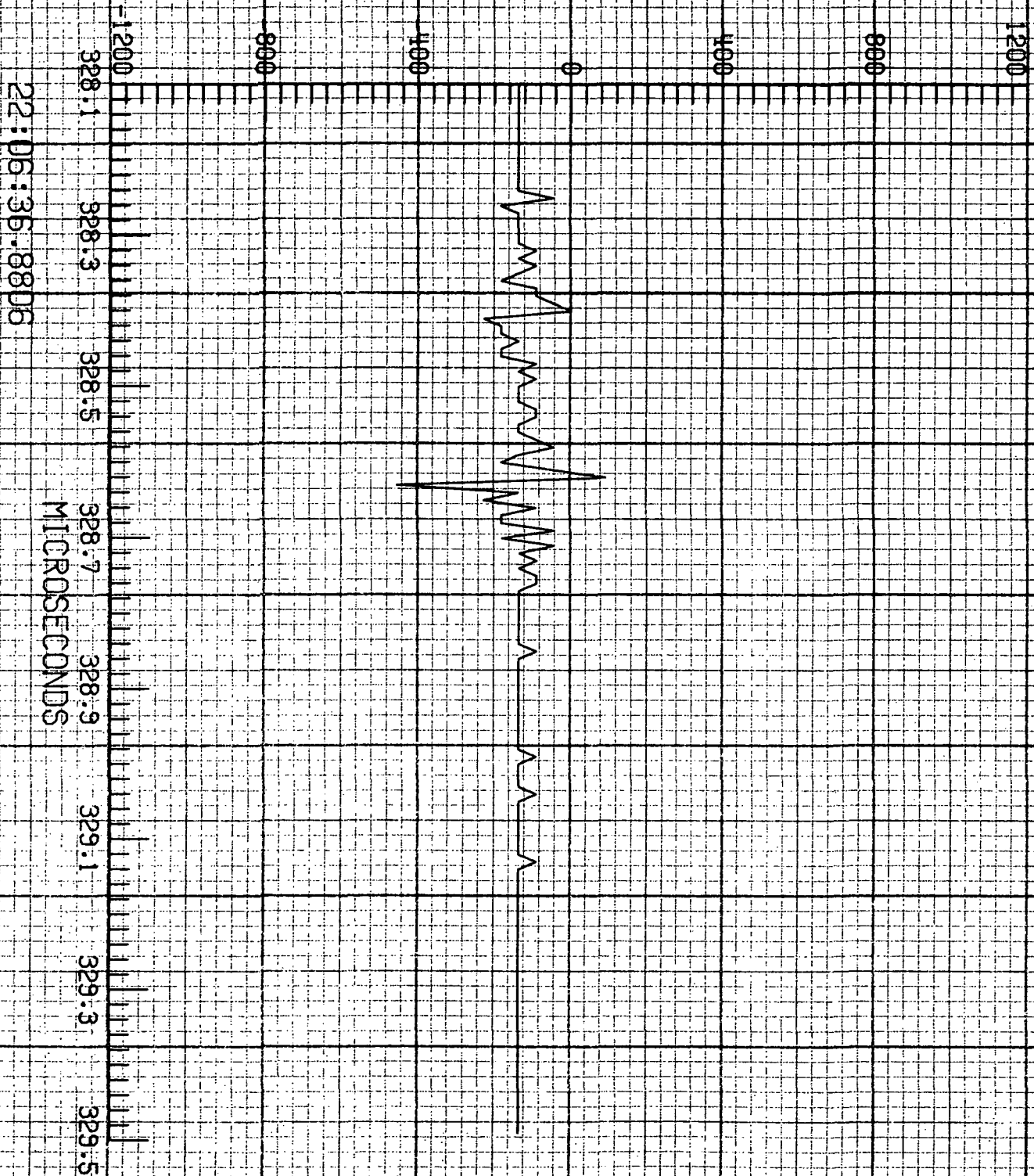
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TEST NO. 83-02

RUN NO. 22

N=012

B DOT I T/S



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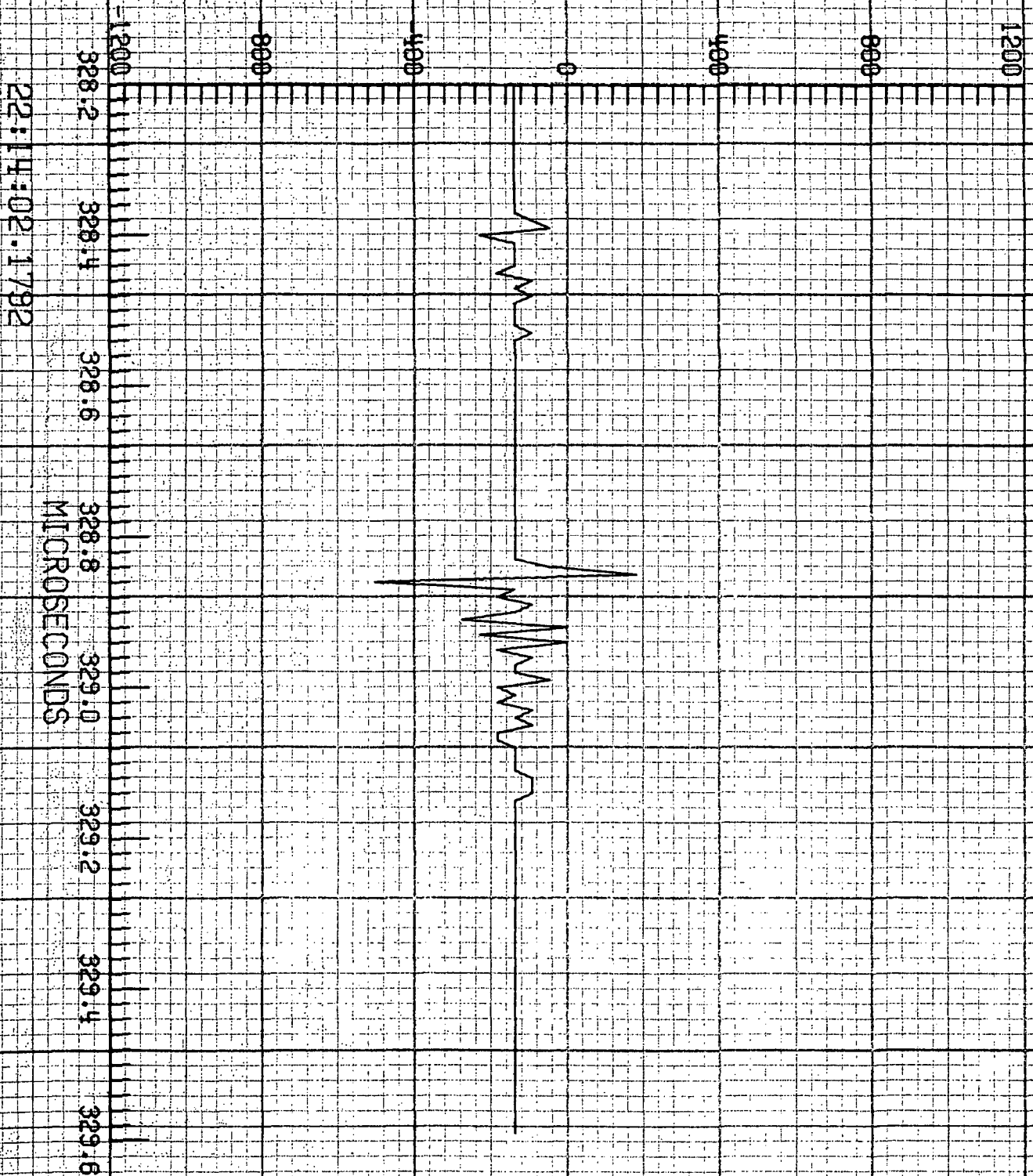
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TEST NO. 83-02

RUN NO. 23

N-013

B DOT L T/S



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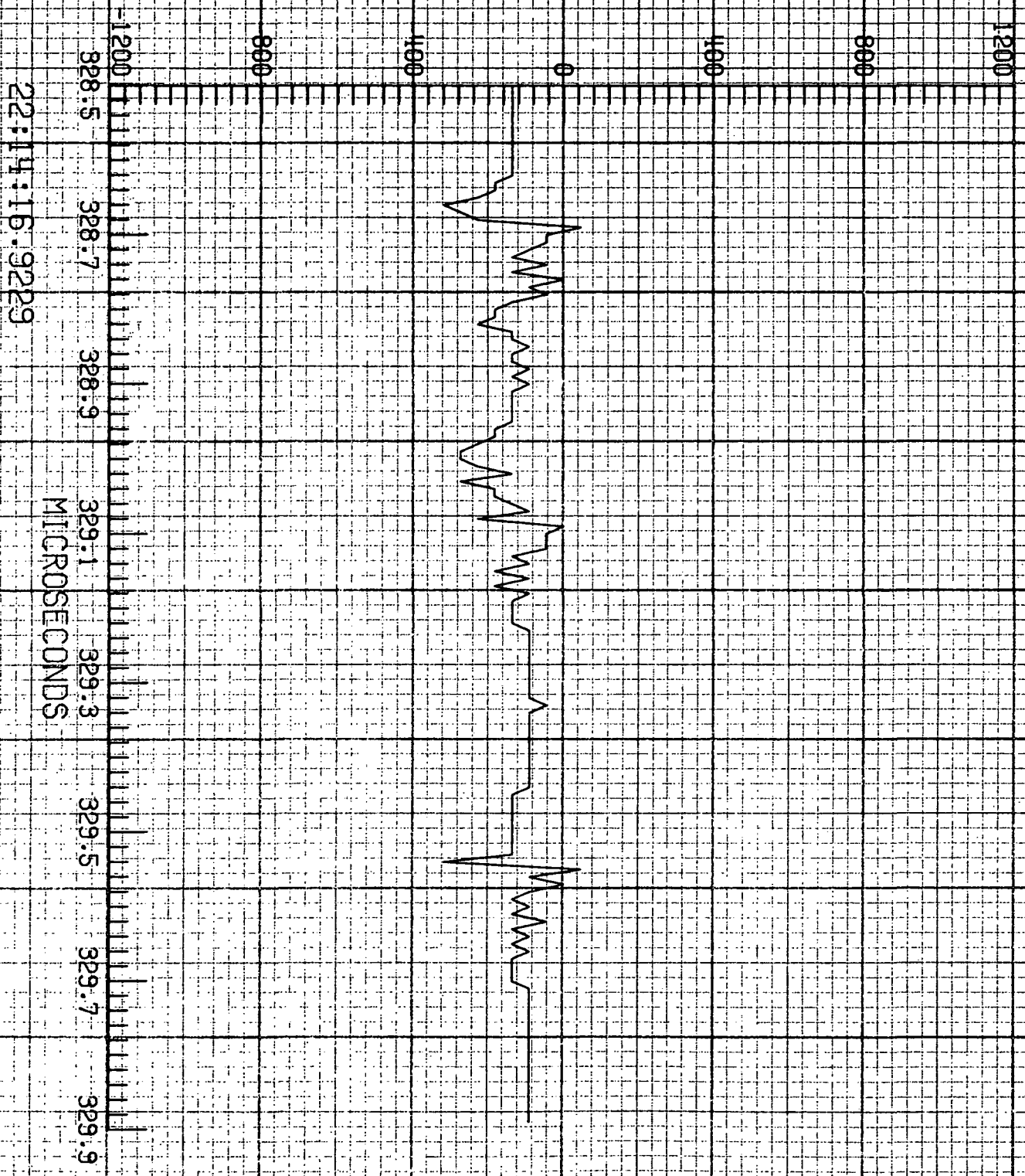
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TEST NO. 83-02

RUN NO. 24

S=012

B DOT U T/S





F106 LIGHTNING/TK.10/M.THOMAS

TEST NO. 83-02

RUN NO. 25

N-014

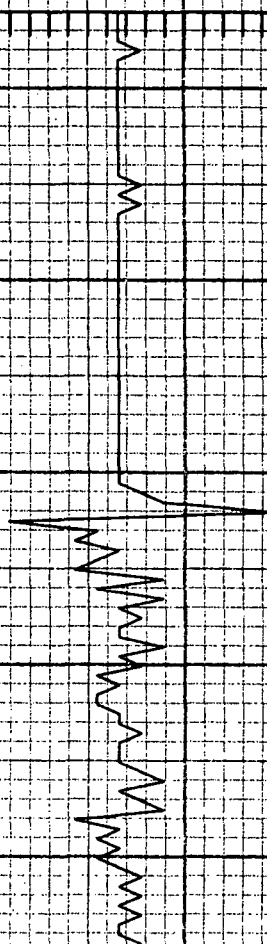
B DOT I T/S

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MICROSECONDS

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F106 LIGHTNING/TK-10/M.THOMAS

TEST NO. 83-029

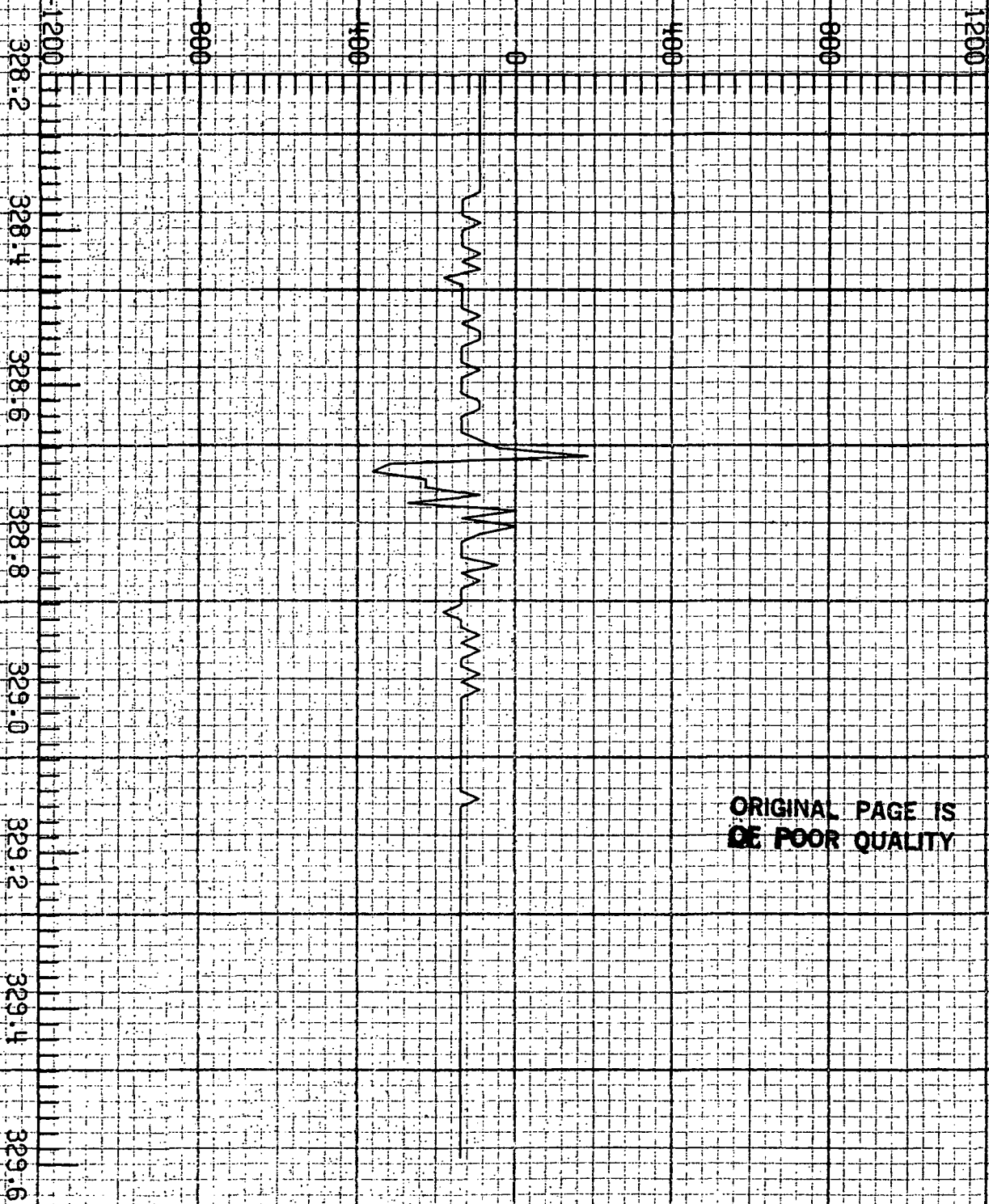
RUN NO. 26

N-015

B DOT L T/S

22:28:37.6013

MICROSECONDS



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F106 LIGHTNING/TK.10/M.THOMAS

TEST NO. 83-029

RUN NO. 27

S-015

B DOT I T/S

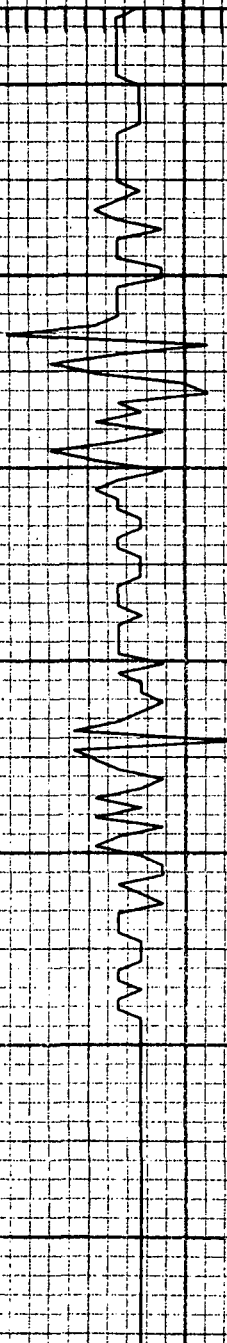
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800  
400  
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400  
800  
1200

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22:32:13.779

MICROSECONDS

328.5  
328.7  
328.9  
329.1  
329.3  
329.5  
329.7  
329.9



F106 LIGHTNING/TK.10/M.THOMAS

TEST NO. 83-02

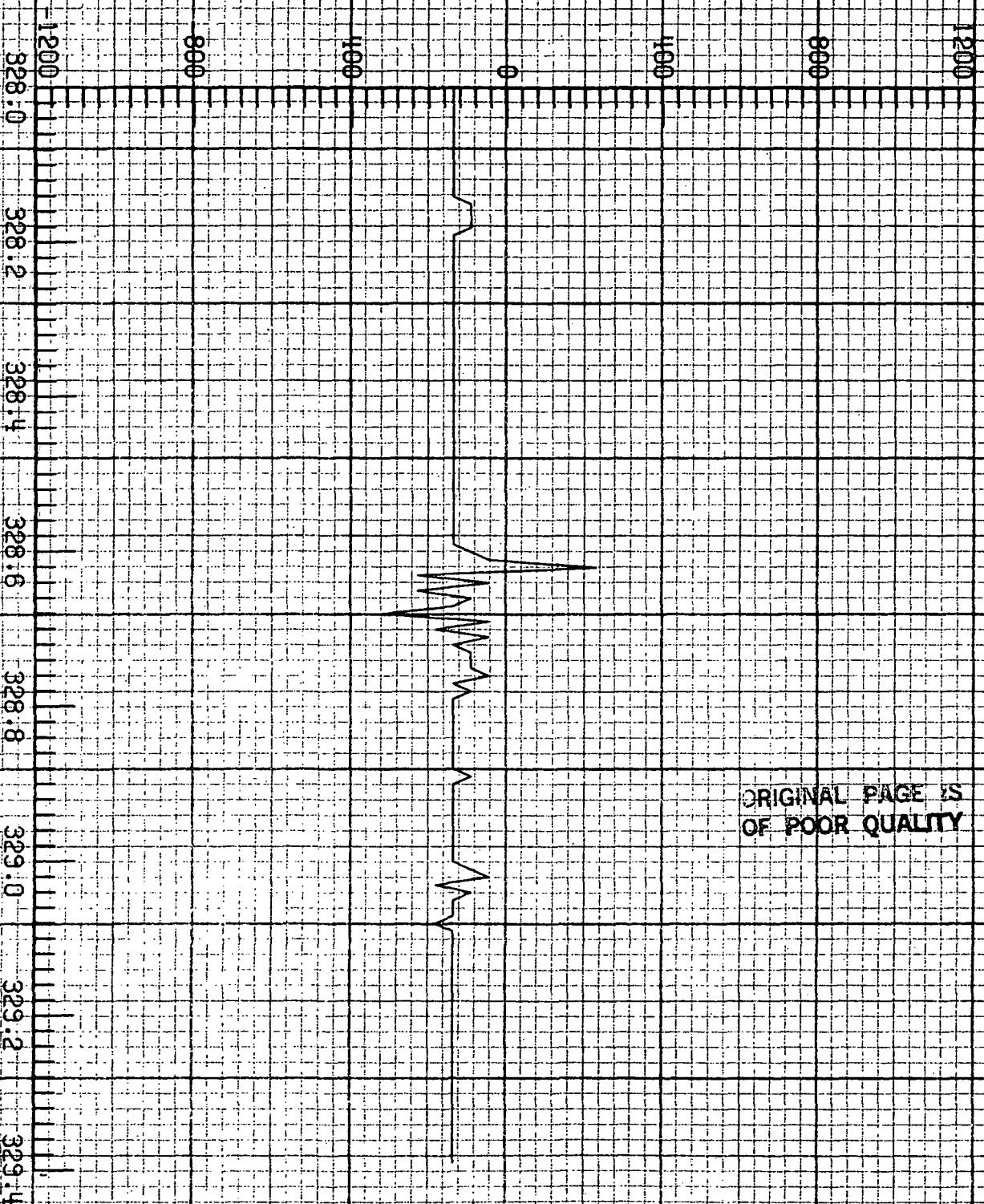
RUN NO. 28

S-016

B DOT L I/S

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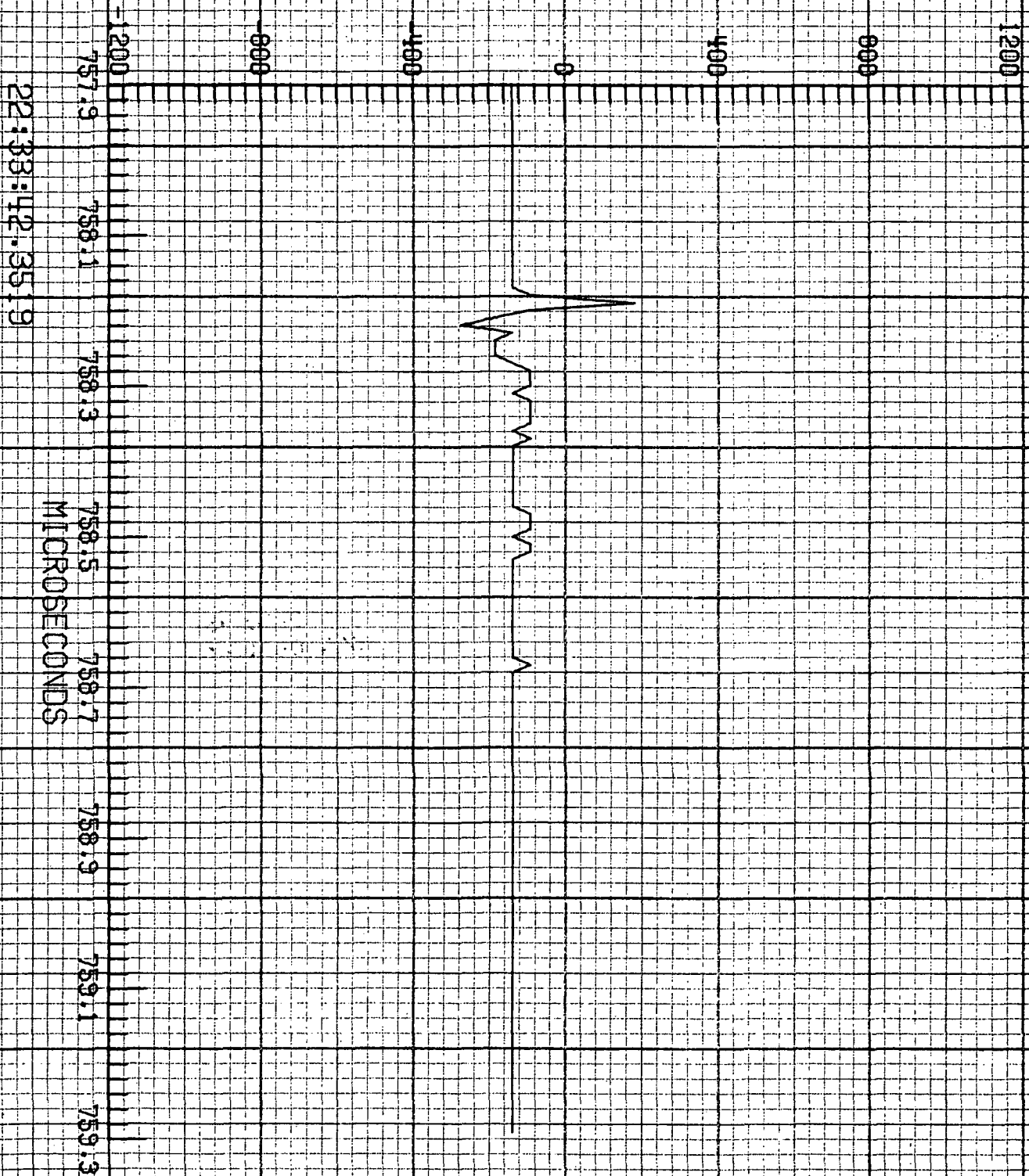
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TEST NO. 83-029

RUN NO. 28

S-016

B DOT L T/S



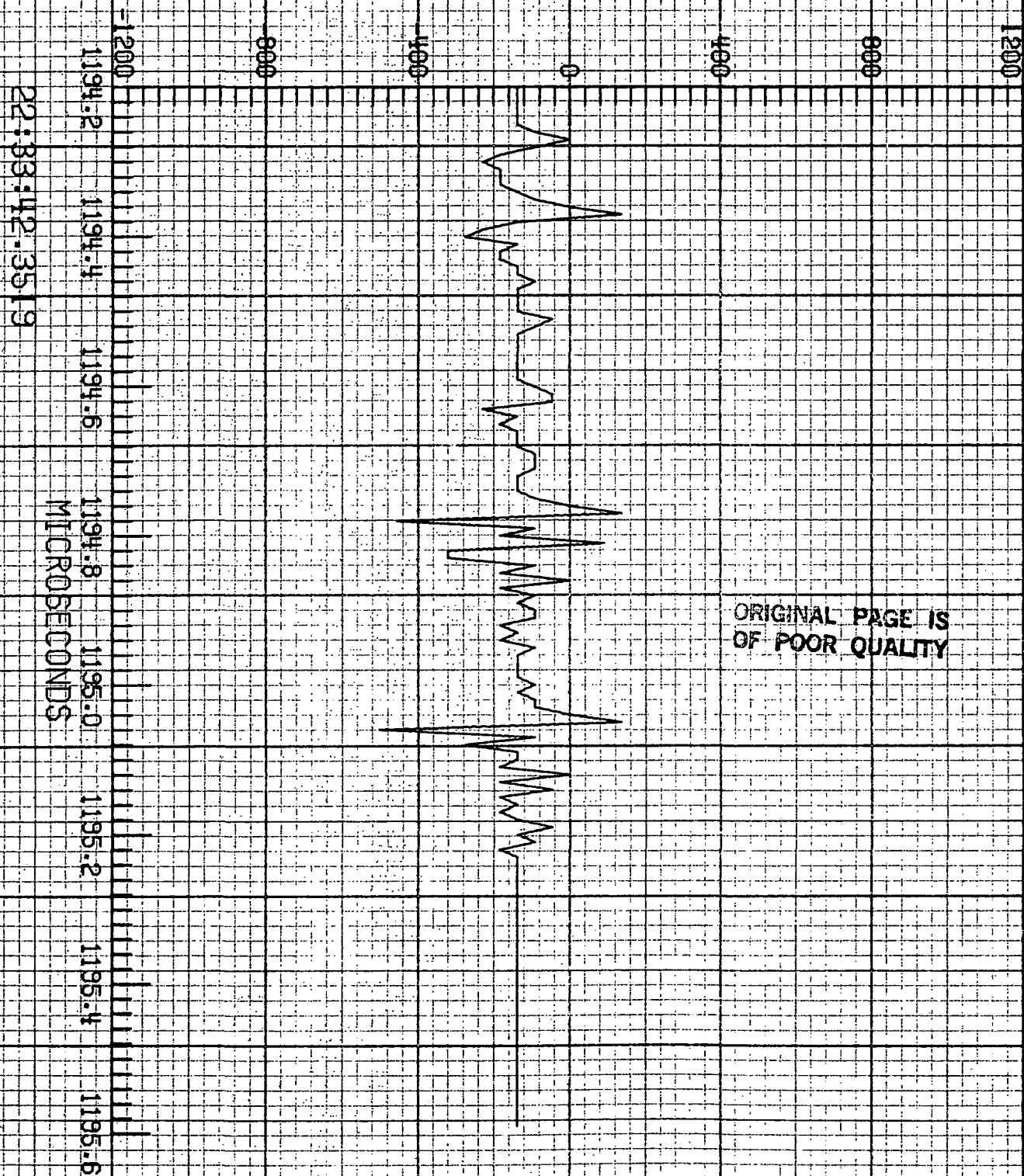
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TEST NO. 83-029

RUN NO. 28

S-016

B DOT U T/S

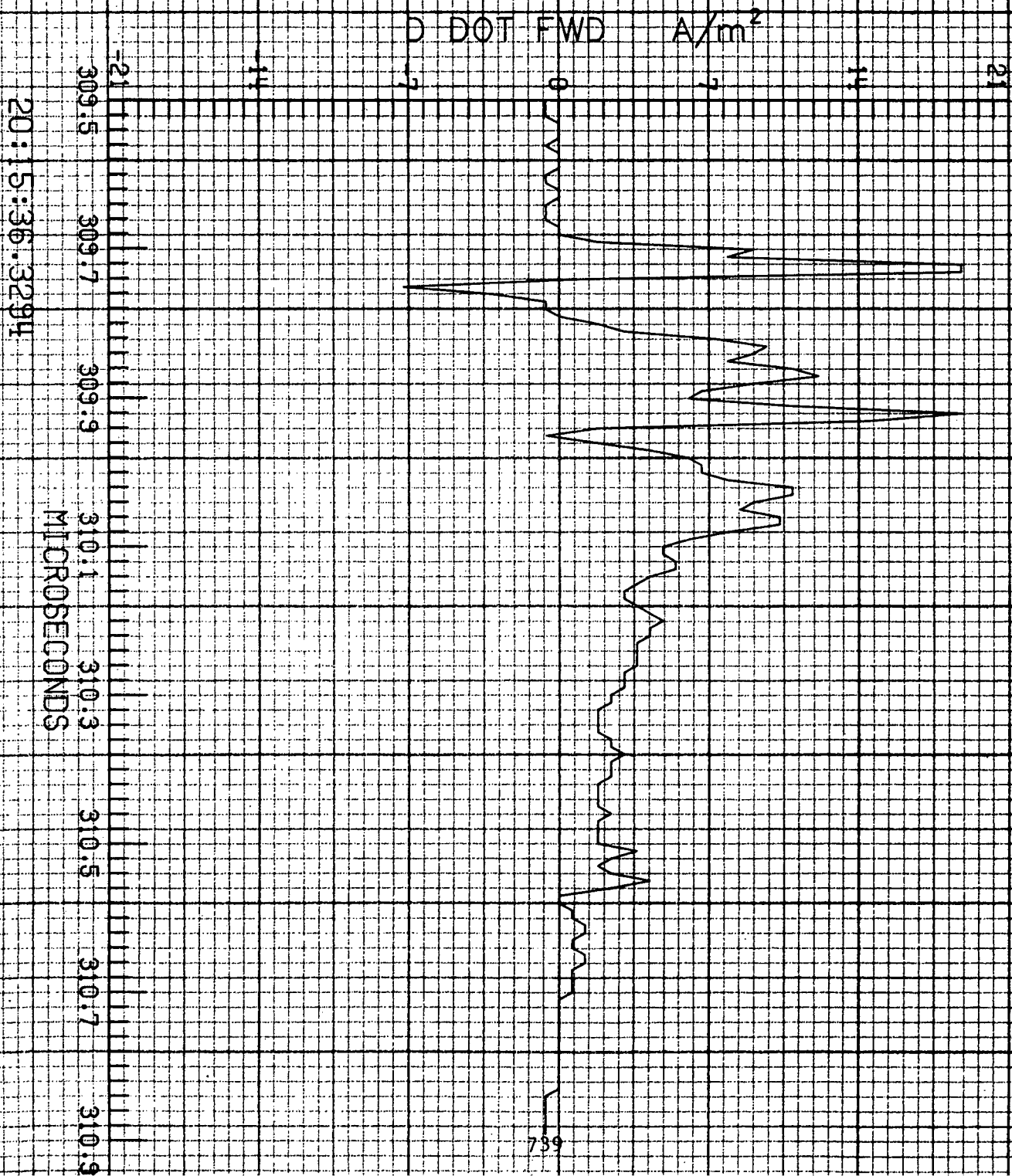


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F106 LIGHTNING TK 8/THOMAS  
RUN NO. 1 S-002

TEST NO. 83-03



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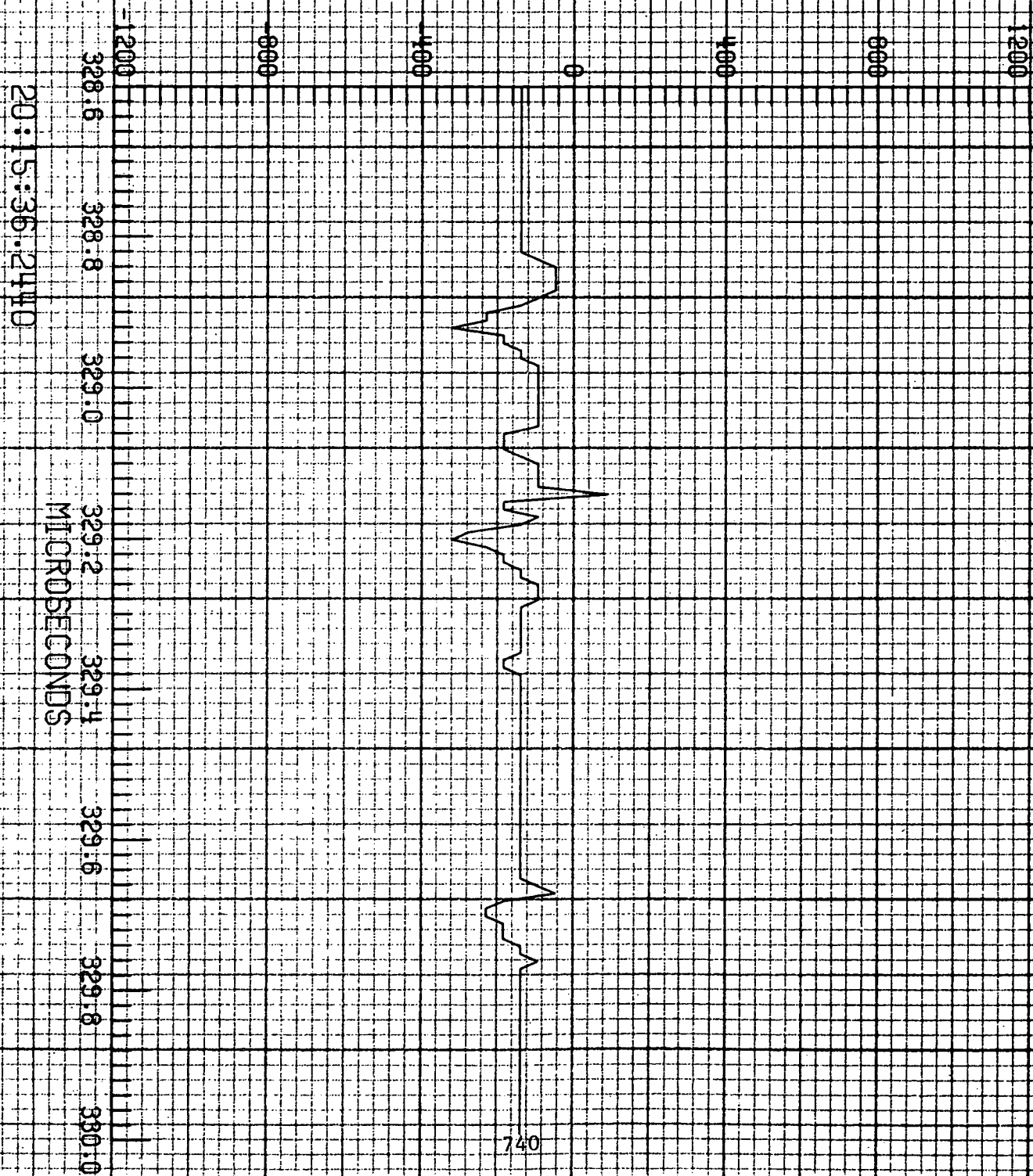
F106 LIGHTNING/TK.10/M.THOMAS

TEST NO. 83-03

RUN NO. 1

S=002

B DOT I T/S





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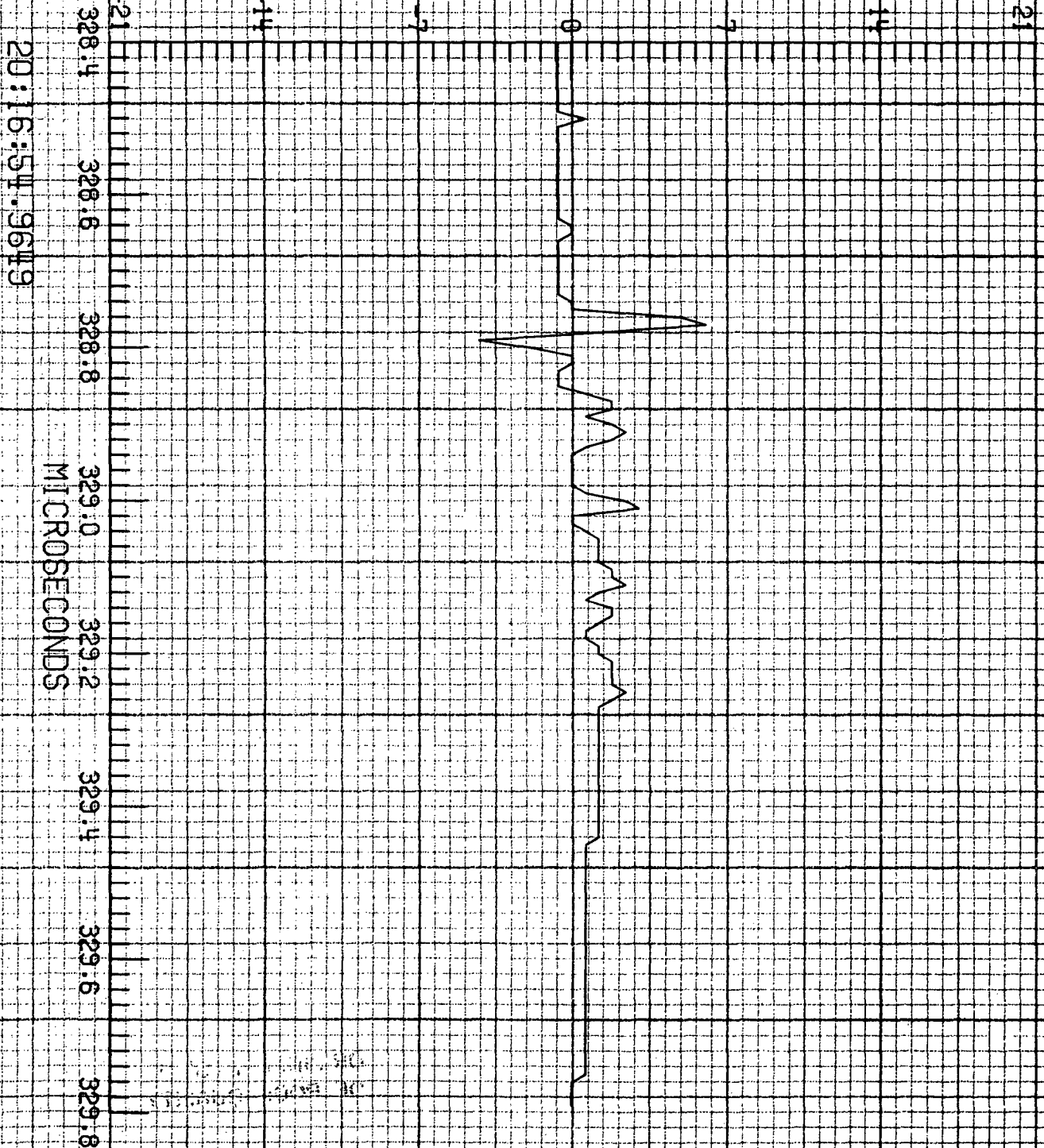
F106 LIGHTNING TK 8/THOMAS

TEST NO. 83-030

RUN NO. 2

N-001

D DOT FWD  $A/m^2$



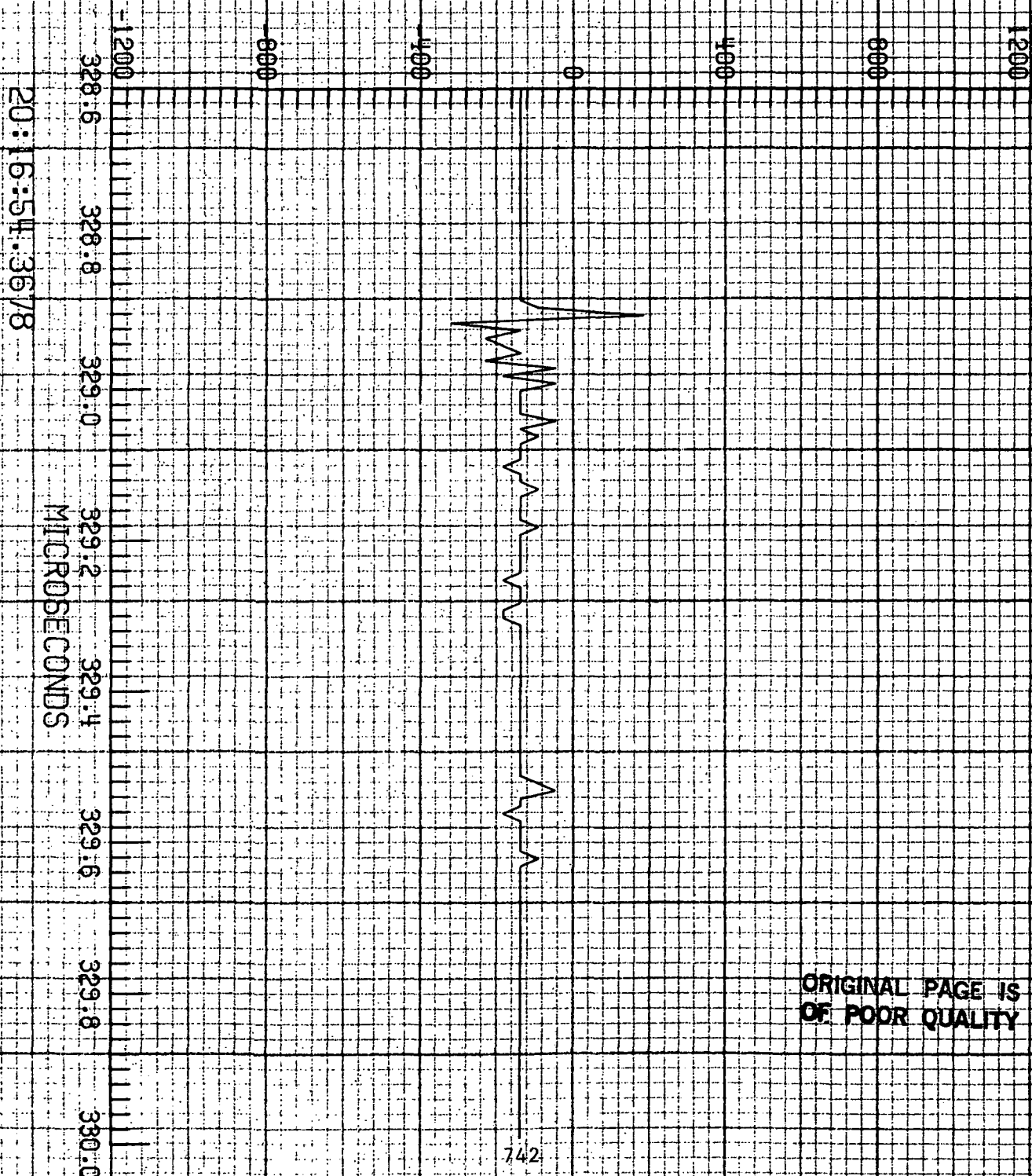
F106 LIGHTNING/TK.10/M.THOMAS

TEST NO. 83-031

RUN NO. 2

N=001

B DOT I T/S



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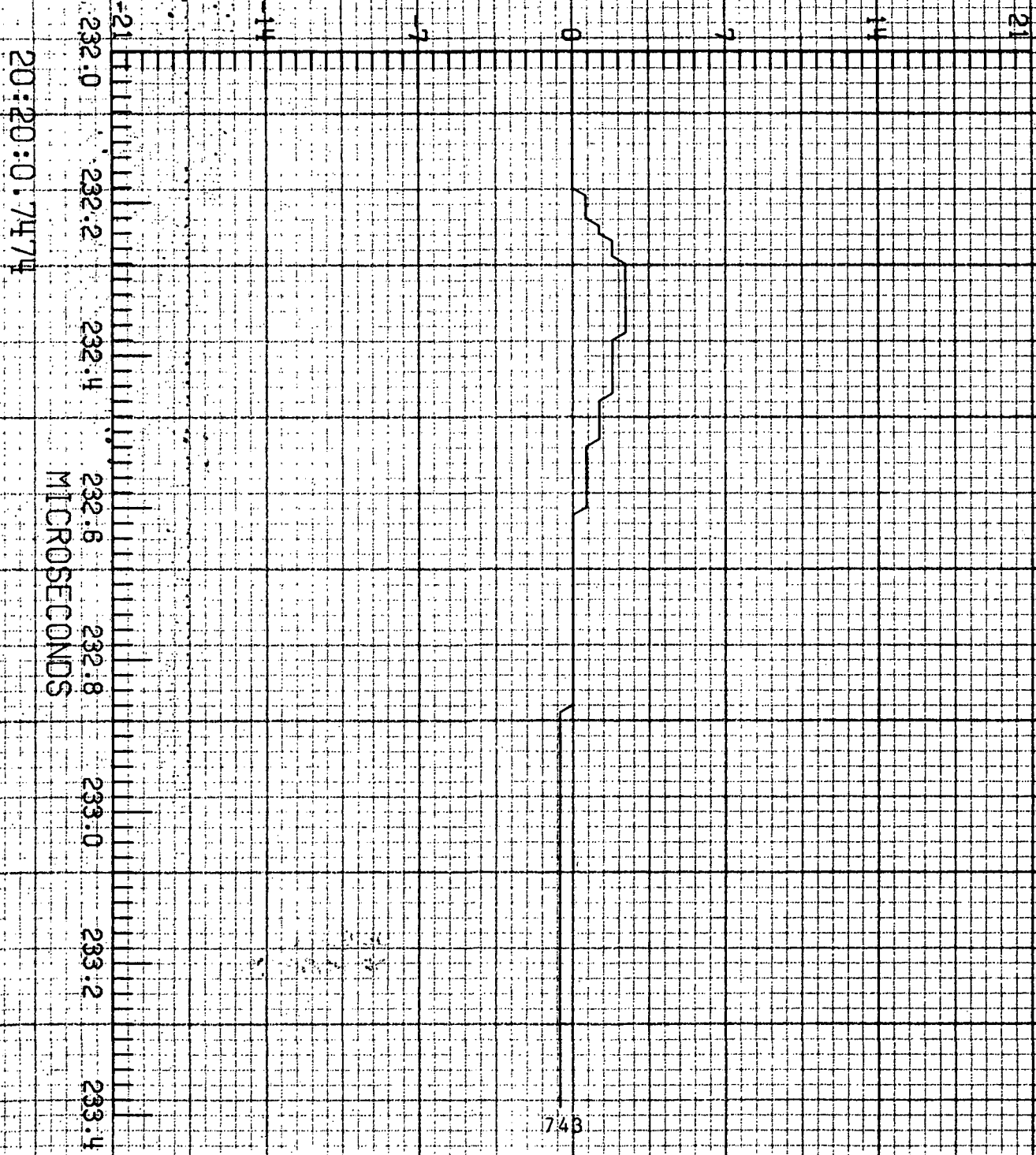
F106 LIGHTNING TK 8/THOMAS

TEST NO. 83-030

RUN NO. 3

S-003

D DOT FWD  $A/m^2$



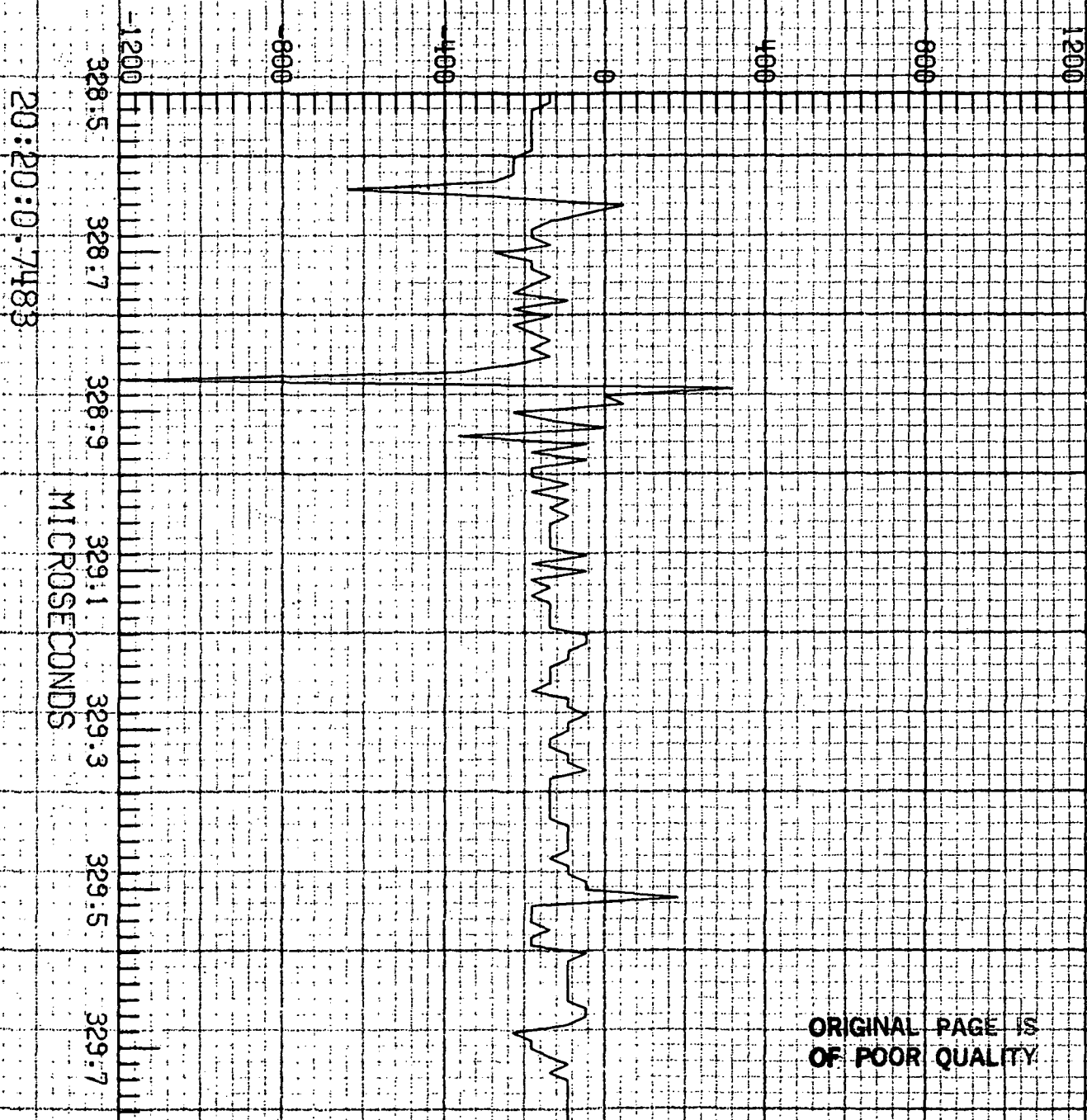
F106 LIGHTNING/TK.10/M.THOMAS

TEST NO. 83-030

RUN NO. 3

S-003

B DOT L T/S



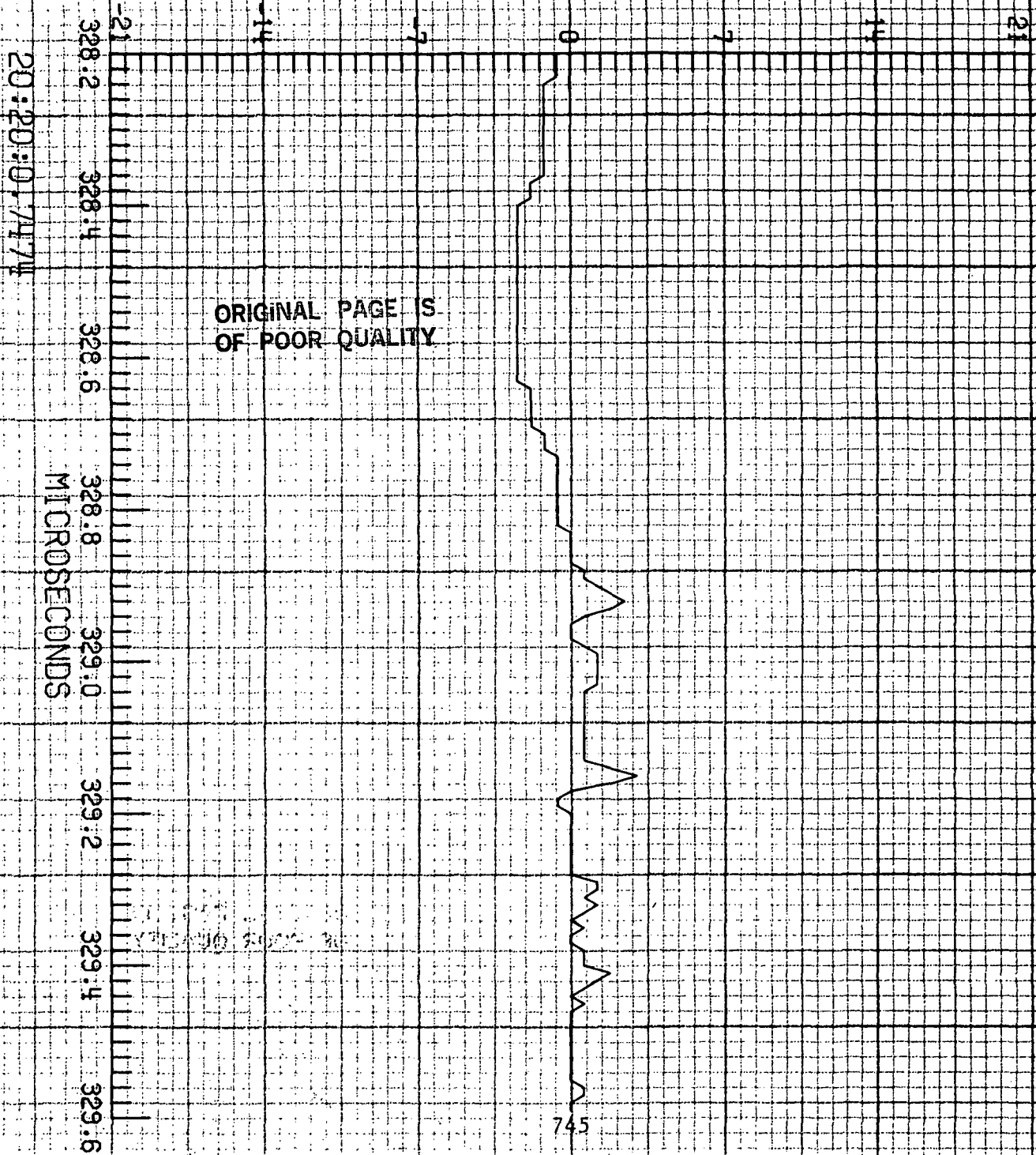
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F106 LIGHTNING TK 8/THOMAS  
RUN NO. 8 S-003

TEST NO. 83-030

D-DOT FWD  $A/m^2$

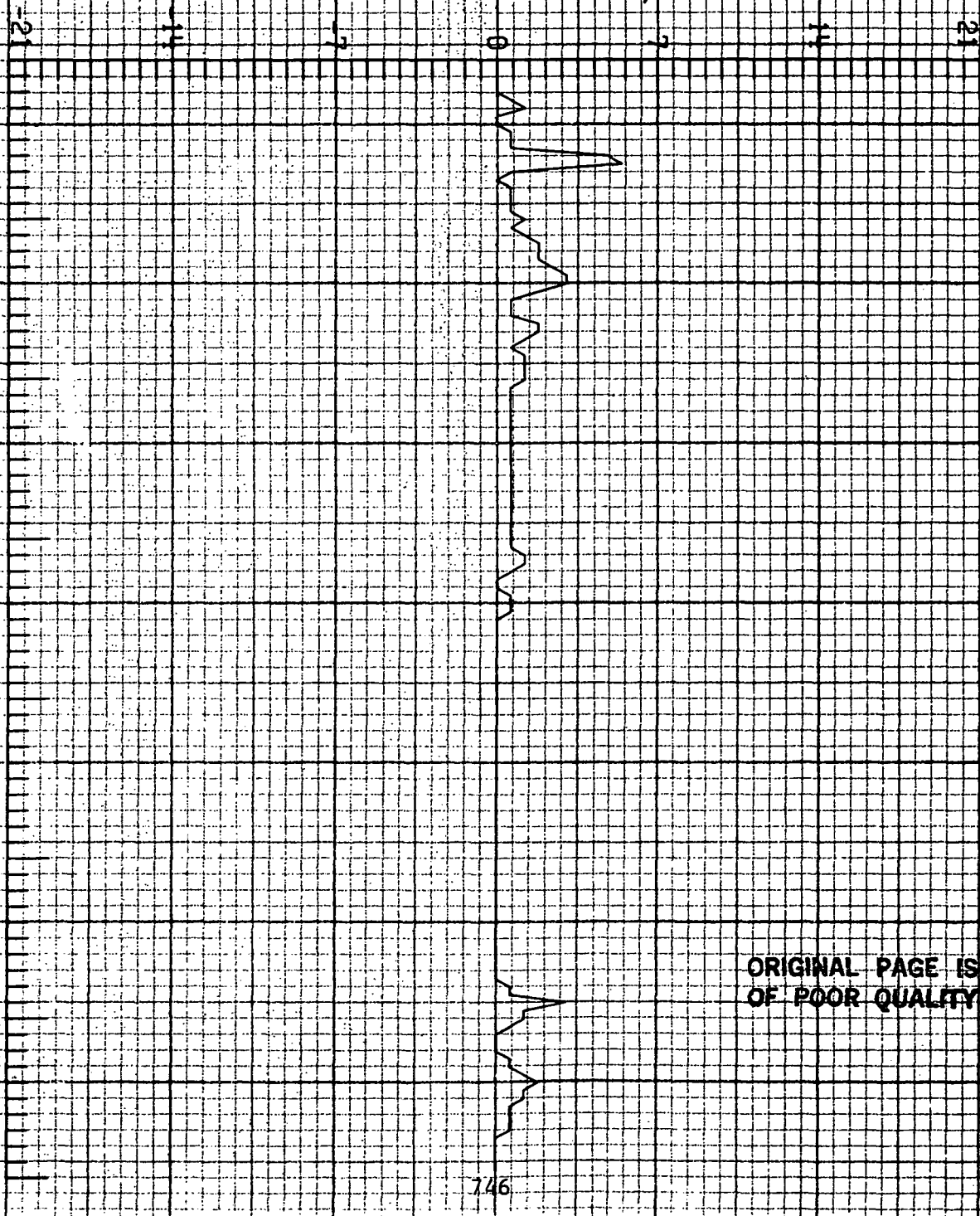




F106 LIGHTNING TK 8/THOMAS  
RUN NO. 3 S-003

TEST NO. 83-030

D DOT FWD  $A/m^2$



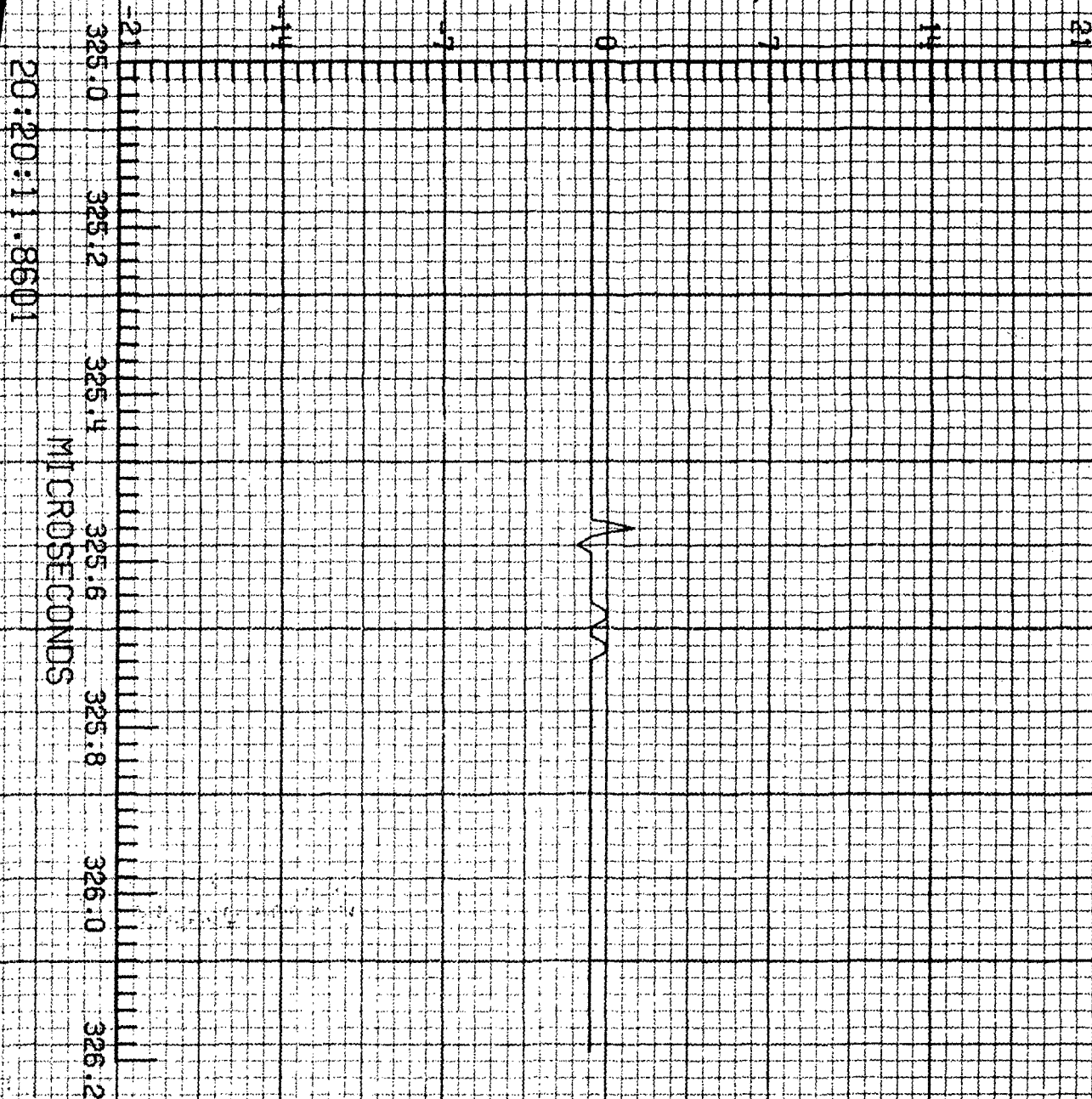
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F106 LIGHTNING TK 8/THOMAS  
RUN NO. 4 S-005

TEST NO. 83-030

D DOT FWD  $A/m^2$



F106 LIGHTNING TK 8/THOMAS  
RUN NO. 4 S-005

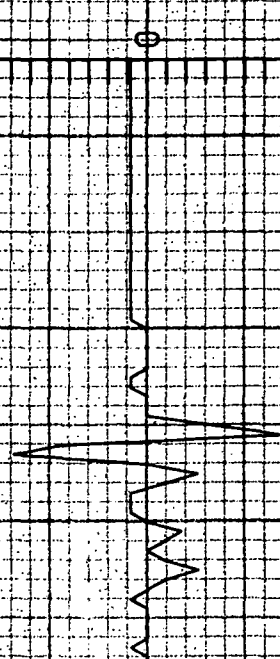
TEST NO. 83-030

D DOT FWD  $A/m^2$

20:20:11.8601

MICROSECONDS

328.4  
328.6  
329.0  
329.2  
329.4  
329.6



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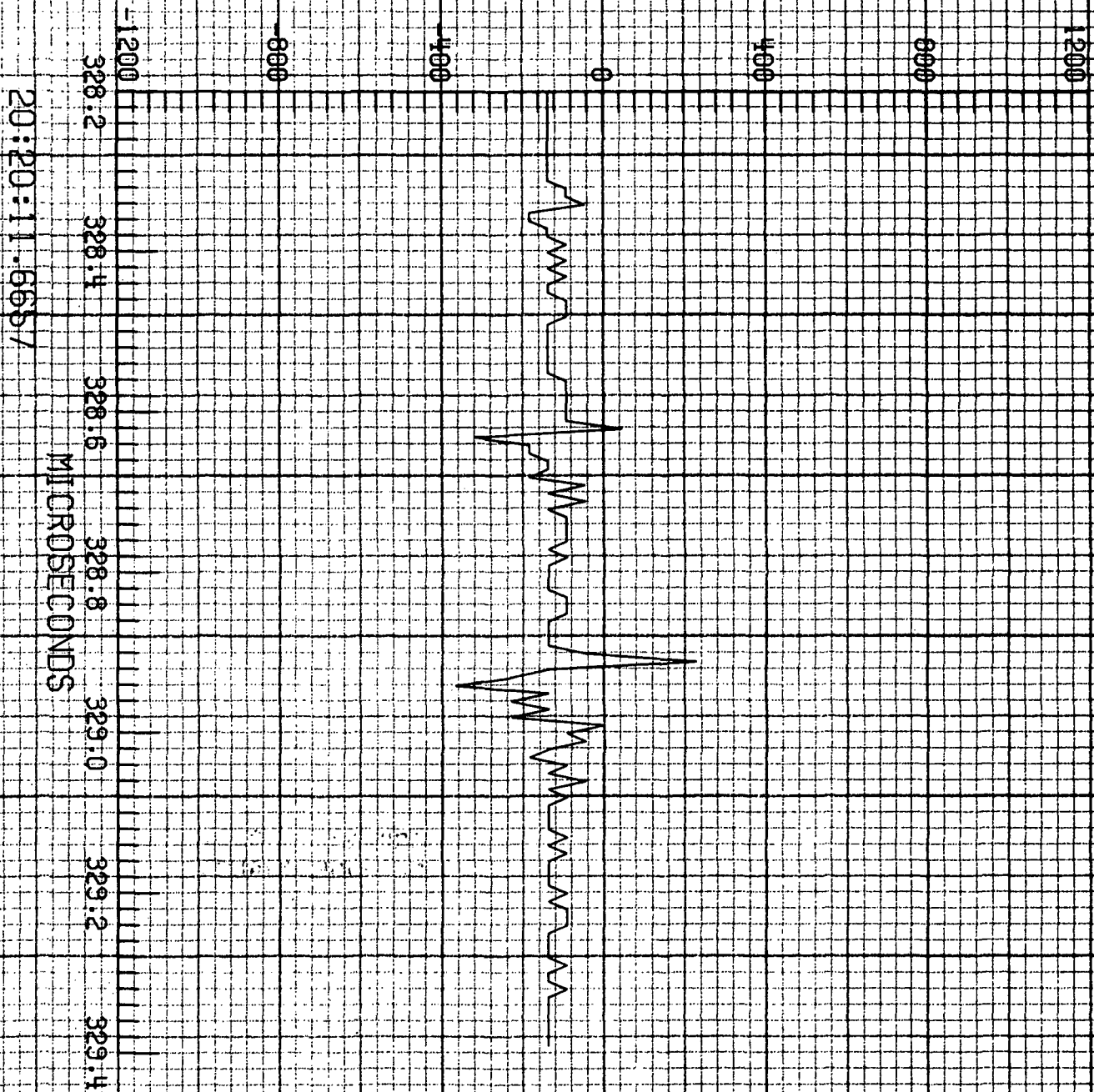


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F106 LIGHTNING/TK.10/M.THOMAS  
RUN NO. 4 S-005

TEST NO. 83-03

B DOT L T/S



F106 LIGHTNING TK 8/THOMAS

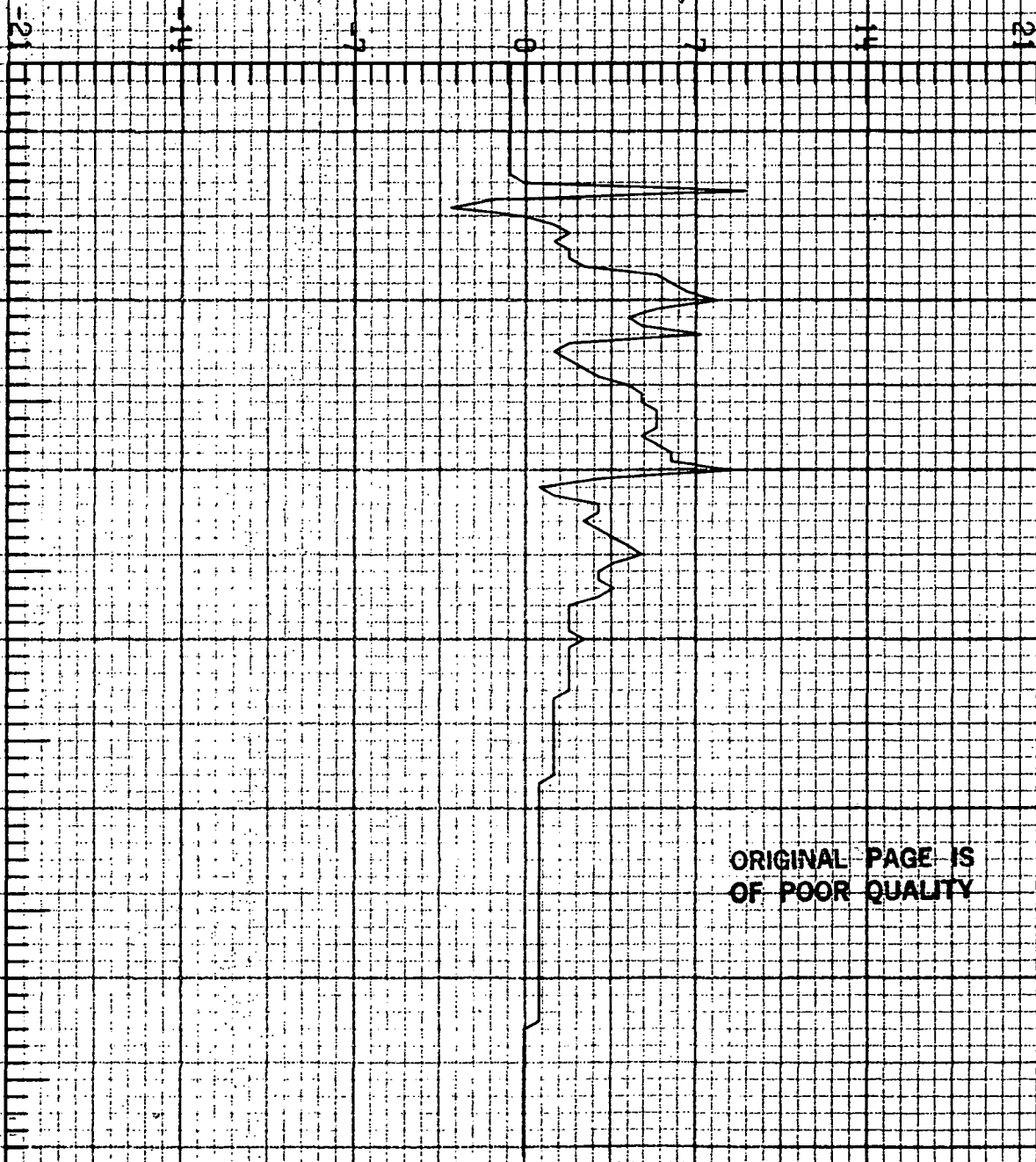
TEST NO. 83-030

RUN NO. 5

S-006

D DOT FWD  $A/m^2$

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328.8  
329.0  
329.2  
329.4  
329.6  
329.8  
MICROSECONDS  
20:25:33.2616



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F106 LIGHTNING/TK.10/M.THOMAS

TEST NO. 83-030

RUN NO. 5

S-006

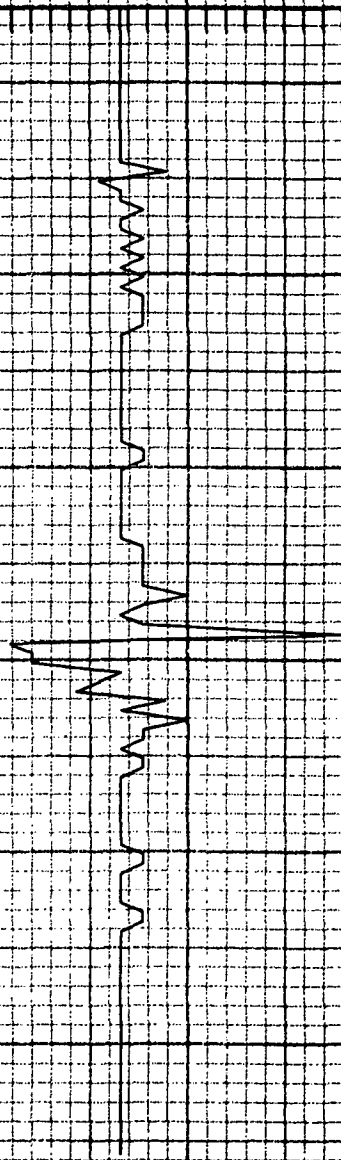
B DOT L T/S

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20:25:33.2259

MICROSECONDS

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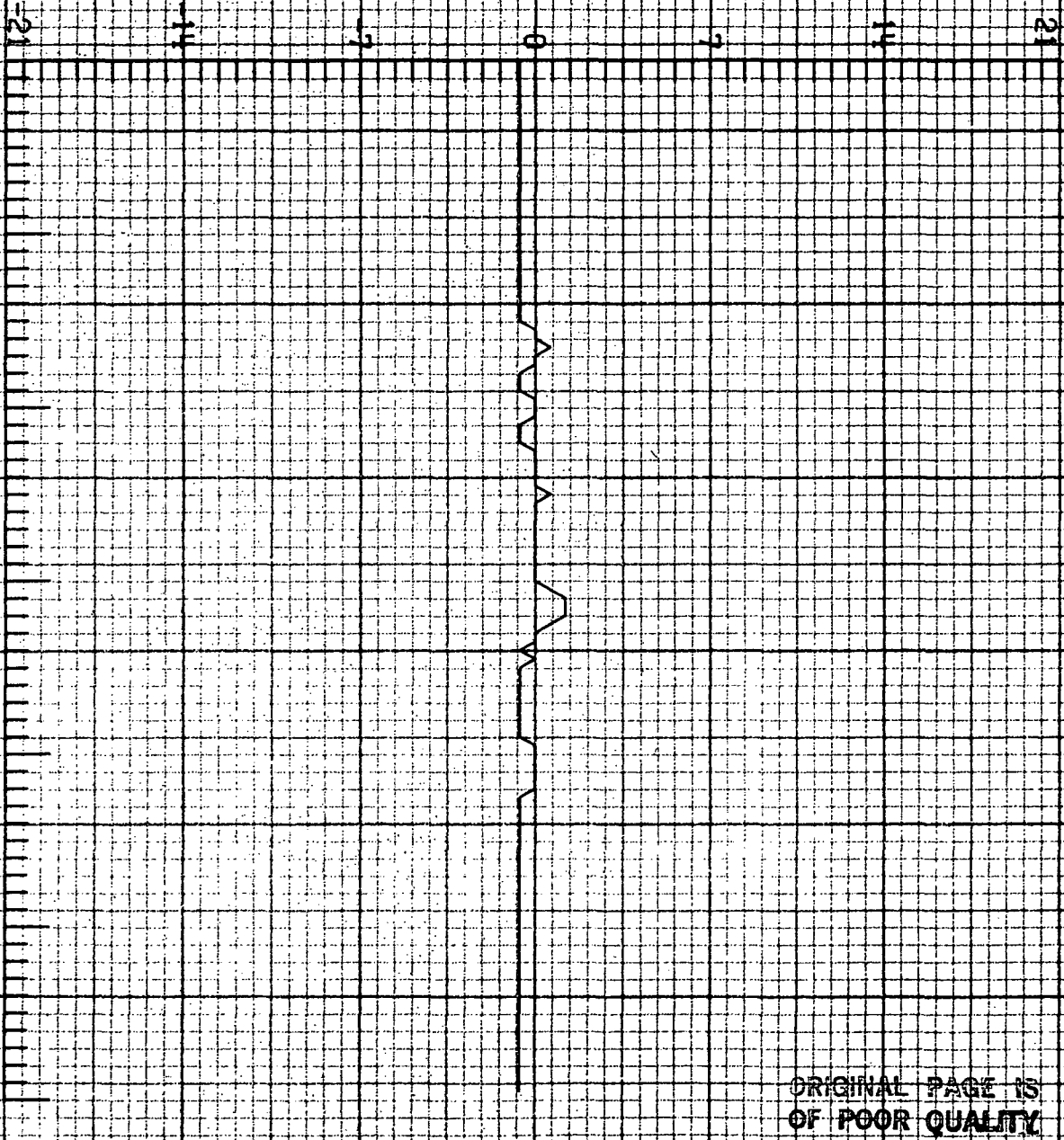


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F106 LIGHTNING TK 8/THOMAS  
RUN NO. 5 N-002

TEST NO. 83-030

D DOT FWD  $A/m^2$



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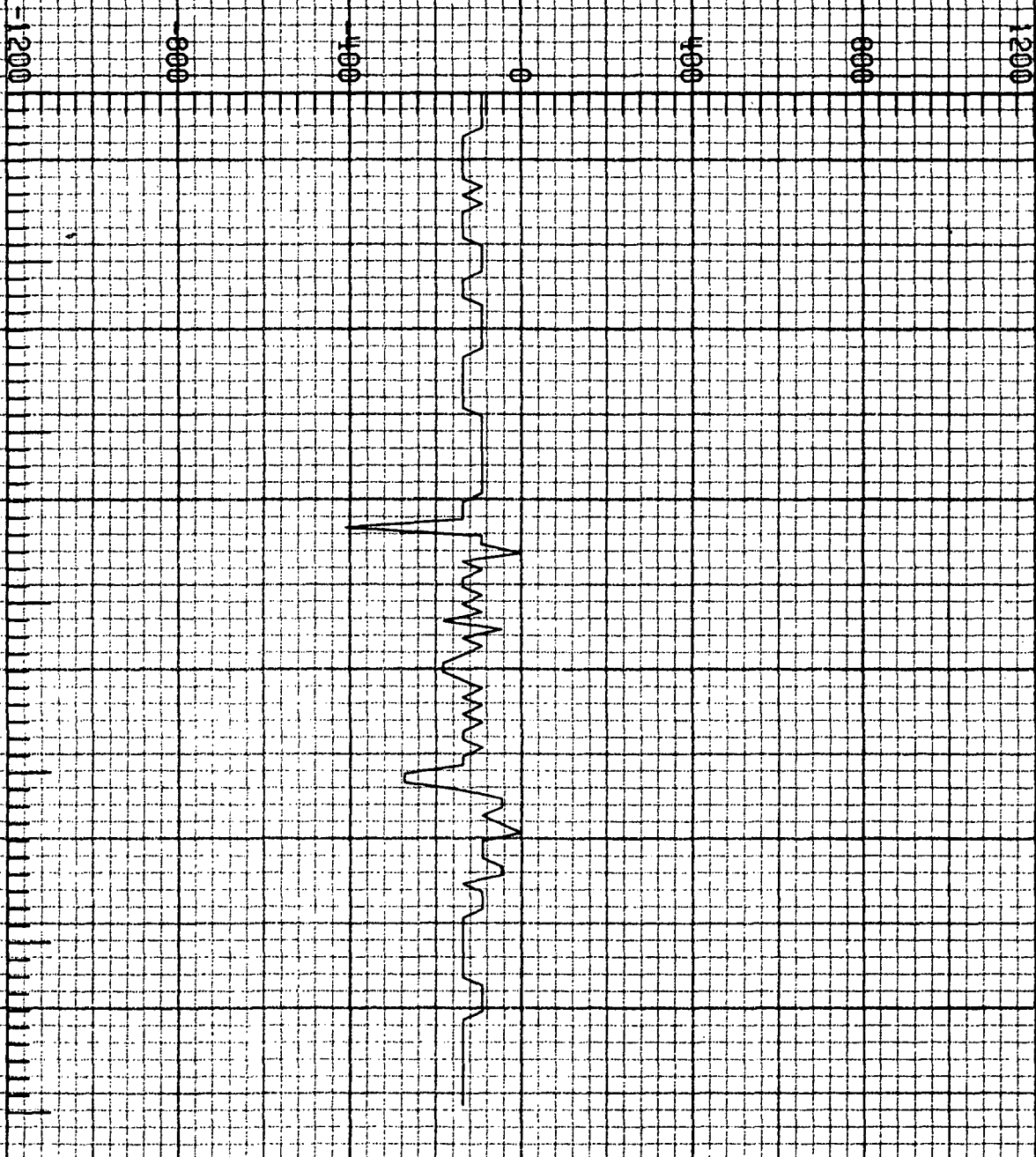
F106 LIGHTNING/TK.10/M.THOMAS

TEST NO. 83-030

RUN NO. 5

N=002

B DOT I T/S



20:26:47.5098

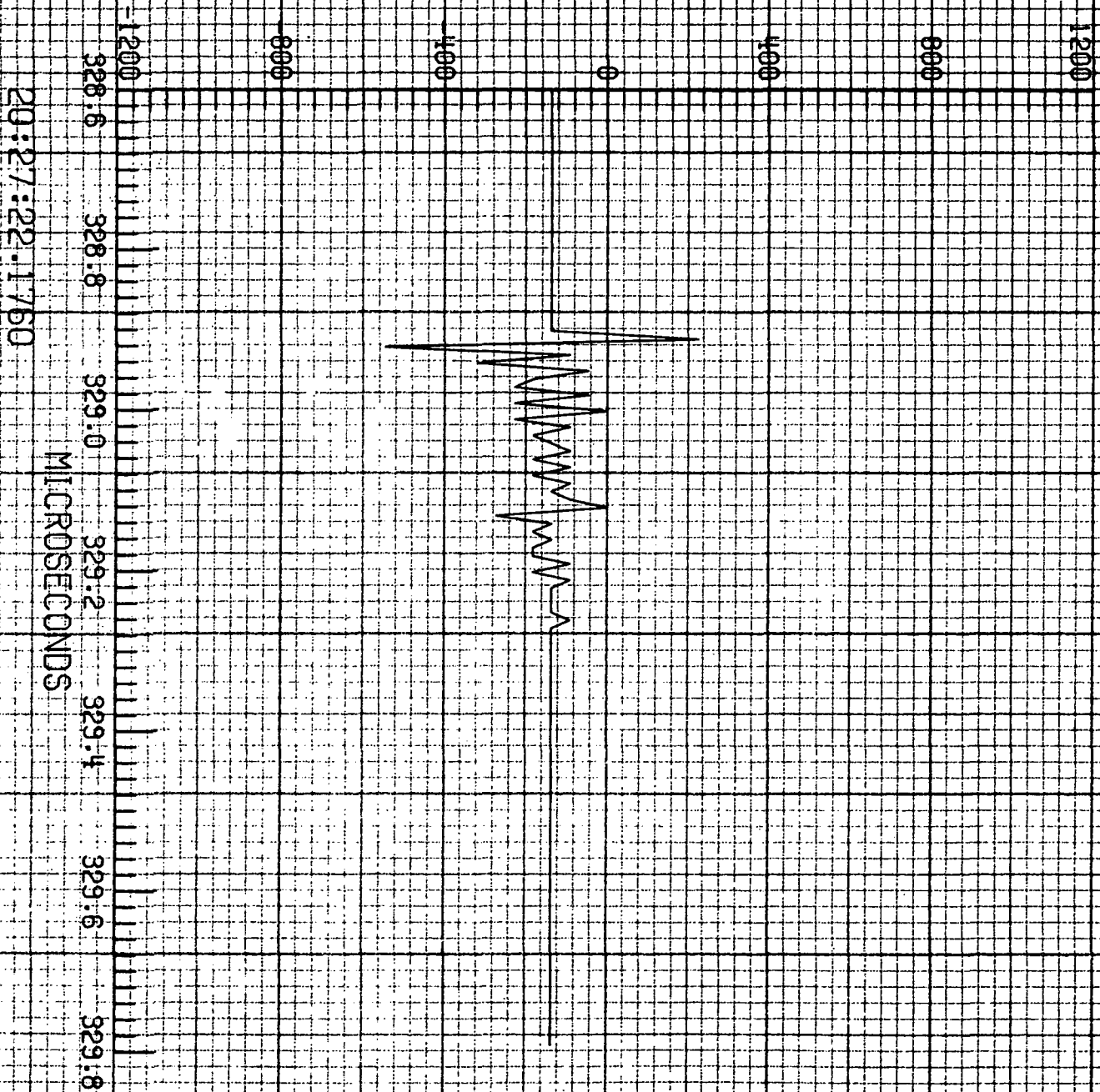
MICROSECONDS

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F106 LIGHTNING/TK.10/M.THOMAS  
RUN NO. 7 N-003

TEST NO. 83-031

B DOT L T/S

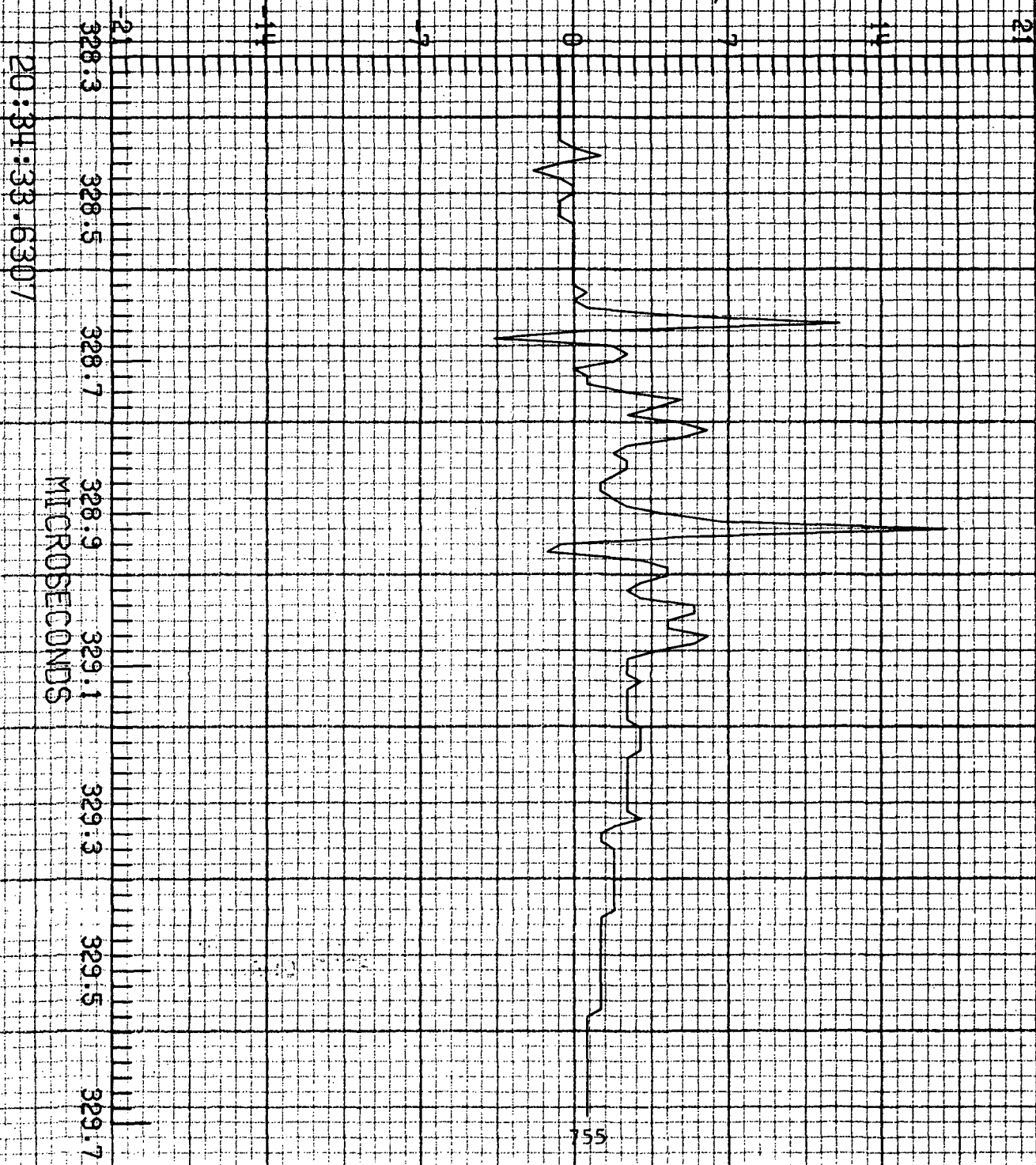


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F106 LIGHTNING TK 8/THOMAS  
RUN NO. 8 S-007

TEST NO. 83-030

D DOT FWD  $A/m^2$



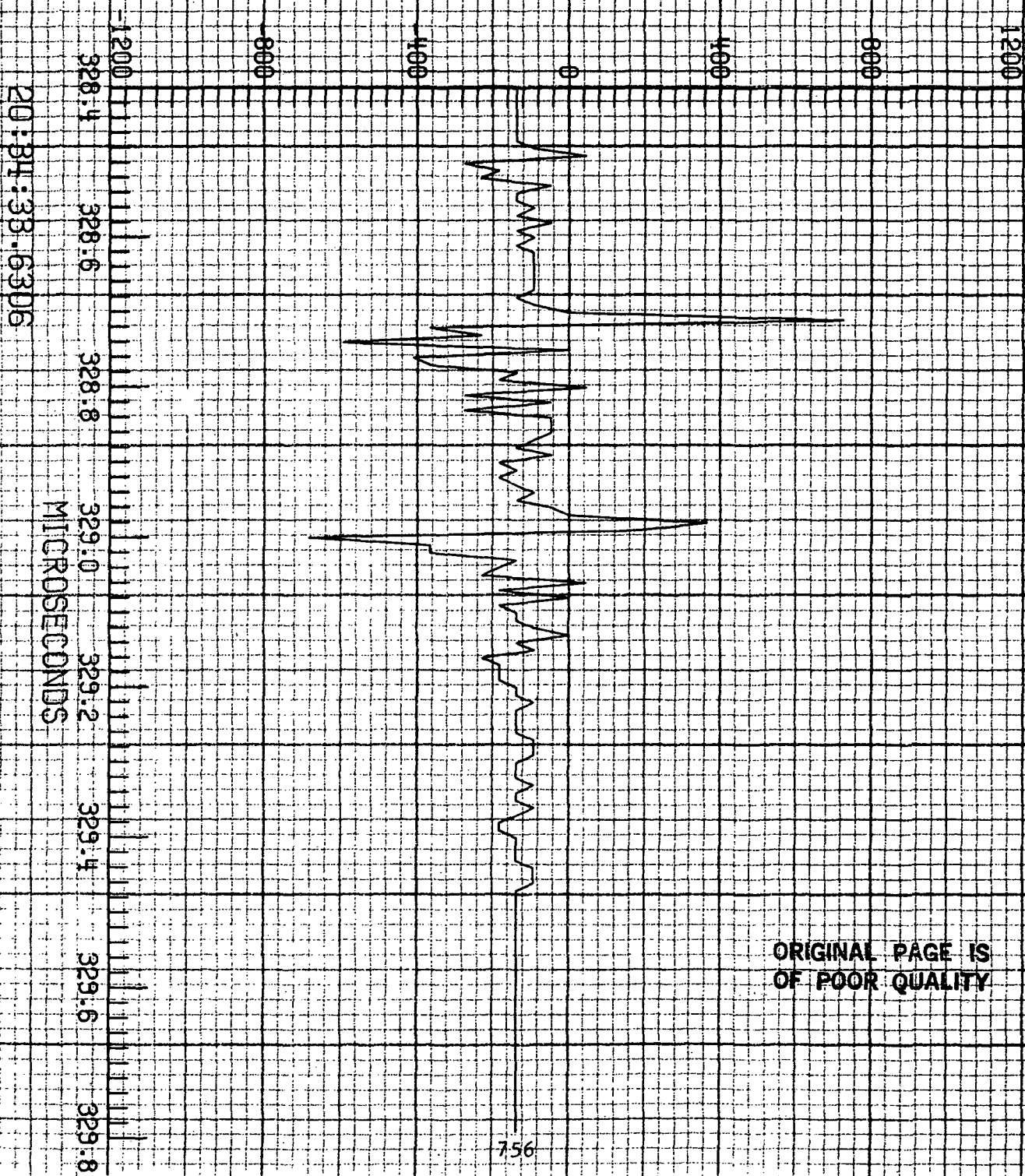
F106 LIGHTNING/TK.10/M.THOMAS

TEST NO. 83-030

RUN NO. 8

S=007

B DOT L T/S



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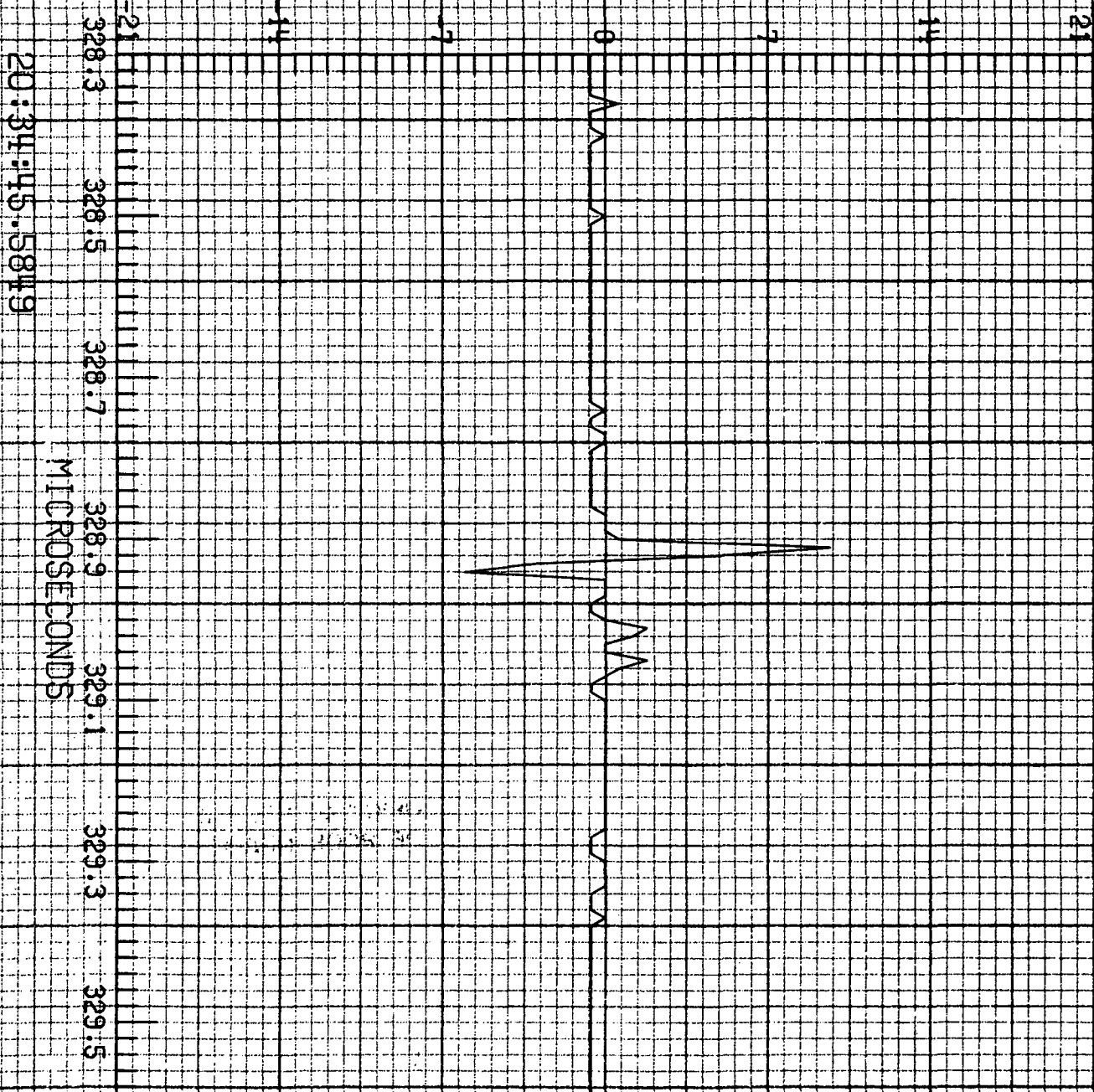
F106 LIGHTNING TK 8/THOMAS

TEST NO. 83-030

RUN NO. 8

S-008

D DOT FWD  $A/m^2$



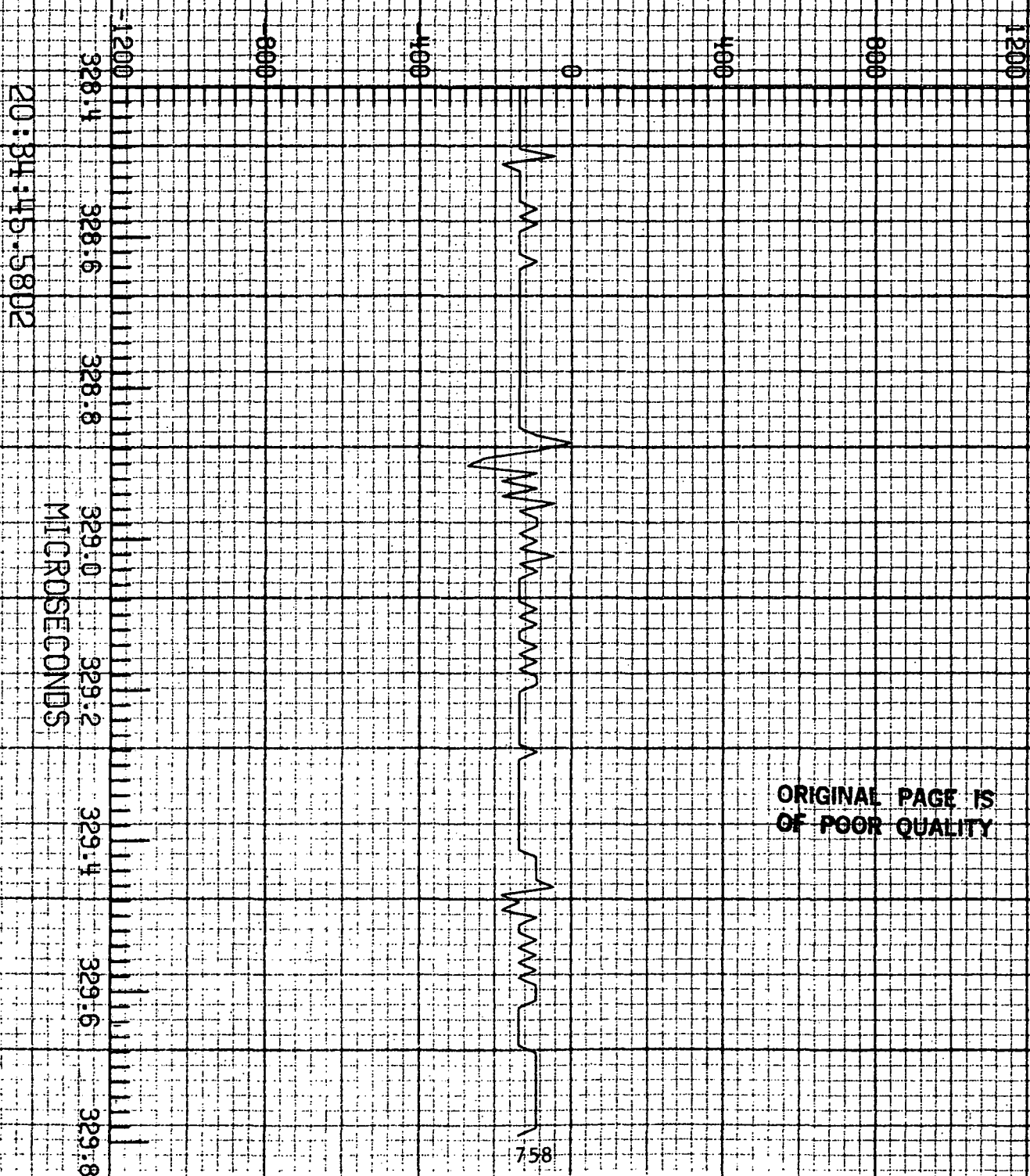
F106 LIGHTNING/TK.10/M.THOMAS

TEST NO. 88-030

RUN NO. 8

S-008

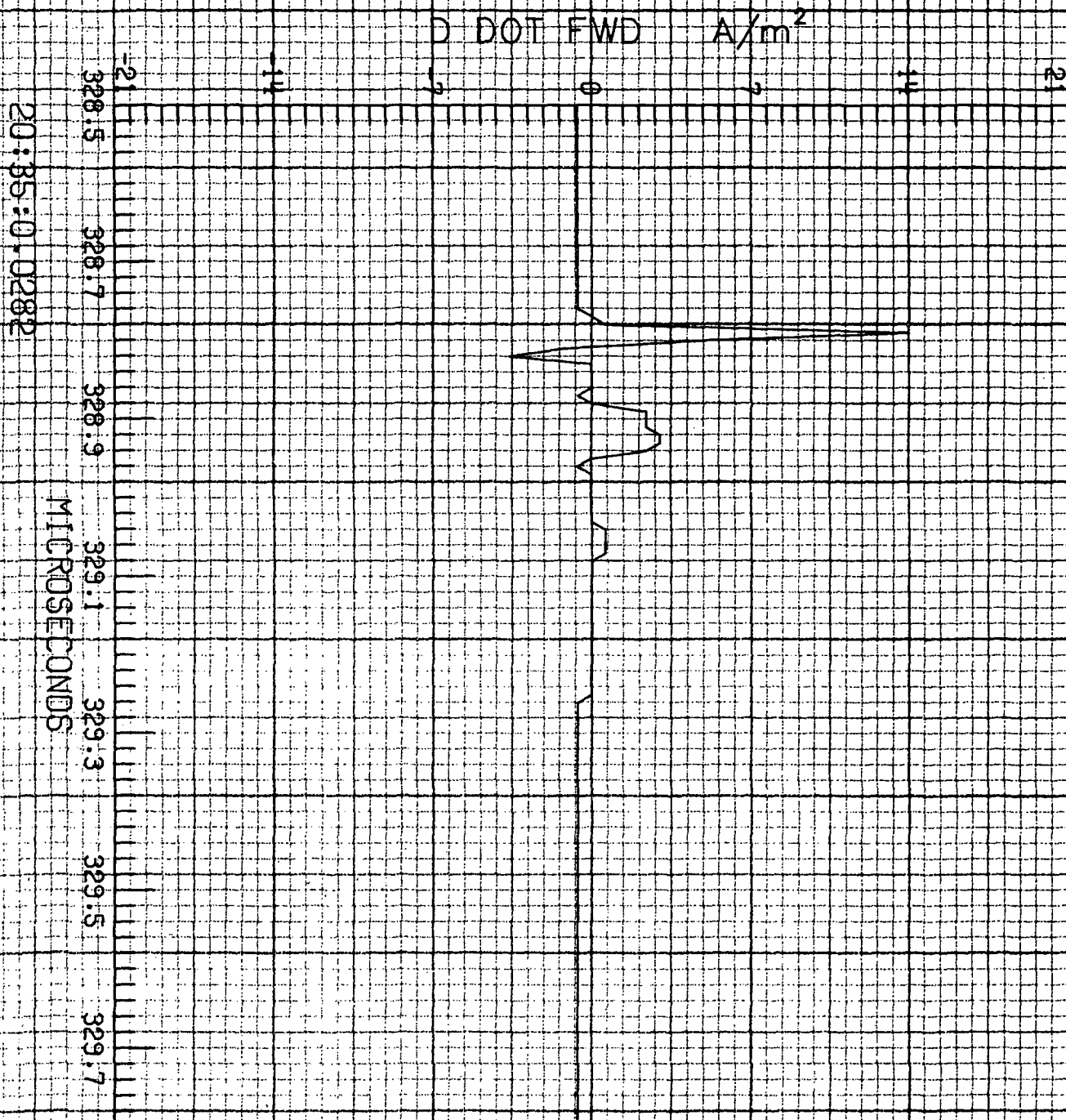
B DOT L T/S



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F106 LIGHTNING TK 8/THOMAS  
RUN NO. 10 S-009

TEST NO. 83-030



F106 LIGHTNING/TK.10/M.THOMAS

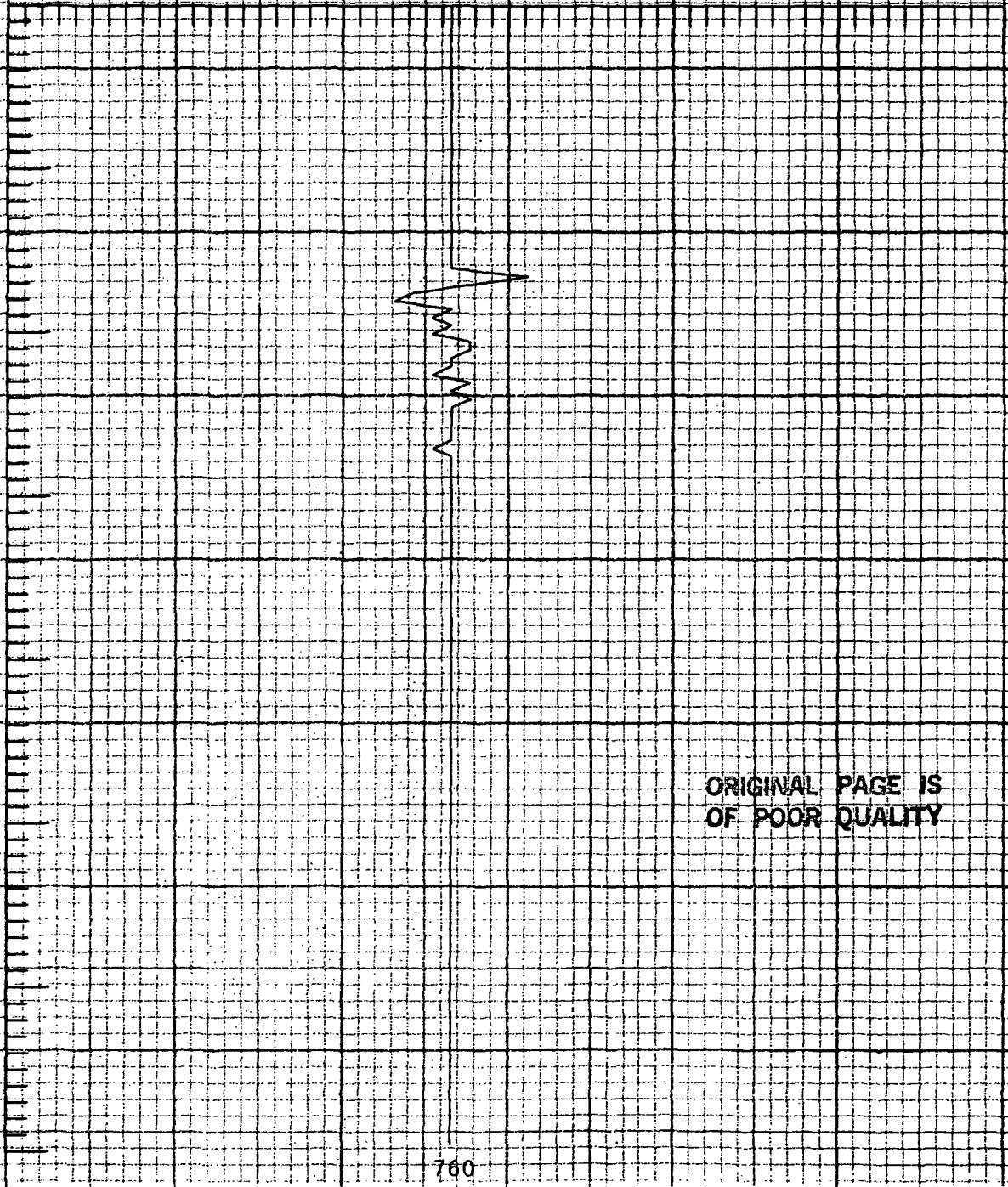
TEST NO. 83-030

RUN NO. 10

S-009

B DOT L T/S

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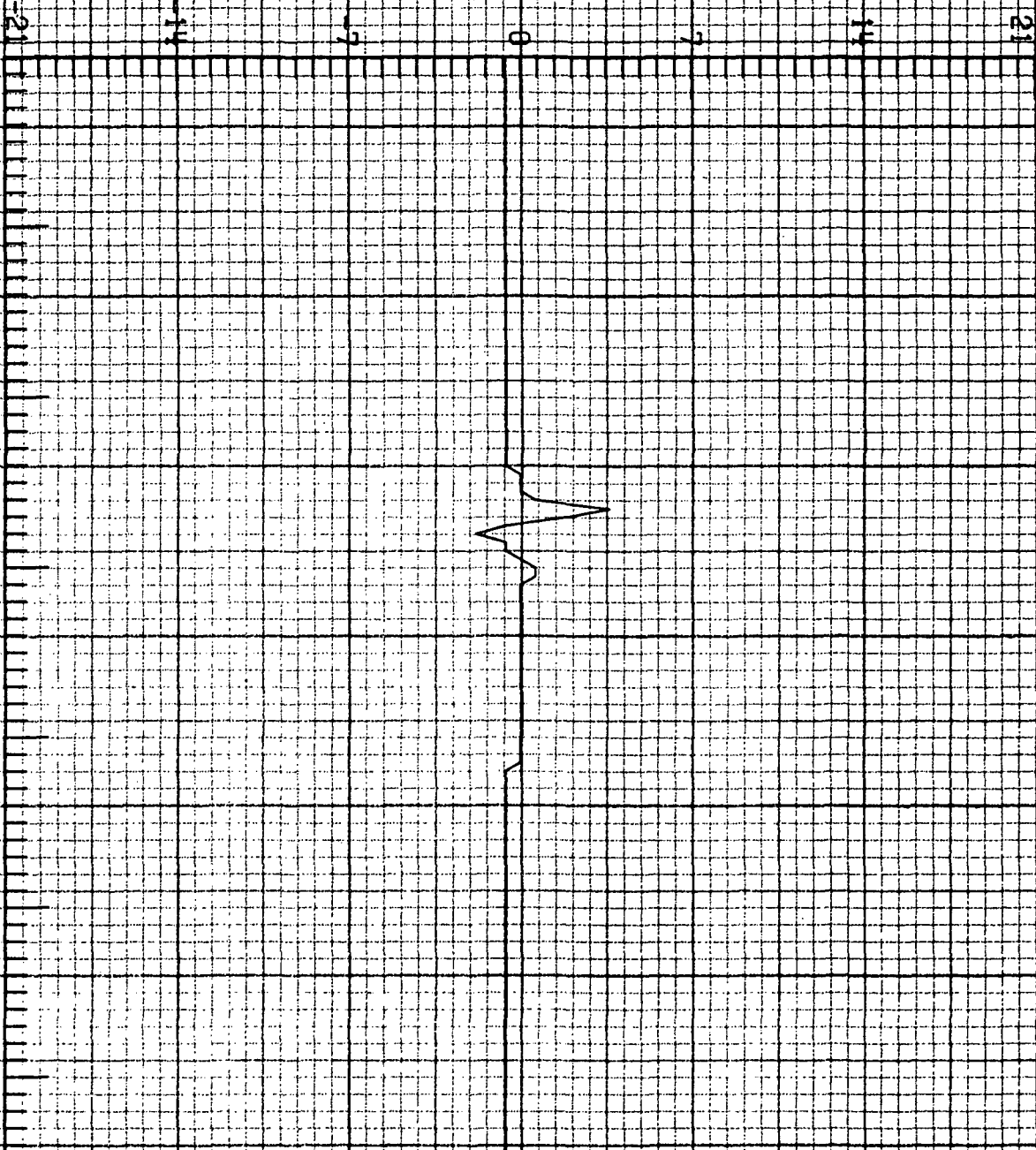


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F106 LIGHTNING TK 8/THOMAS  
RUN NO. 10 S-009

TEST NO. 83-030

D DOT FWD  $A/m^2$



20:35:0.0282

MICROSECONDS

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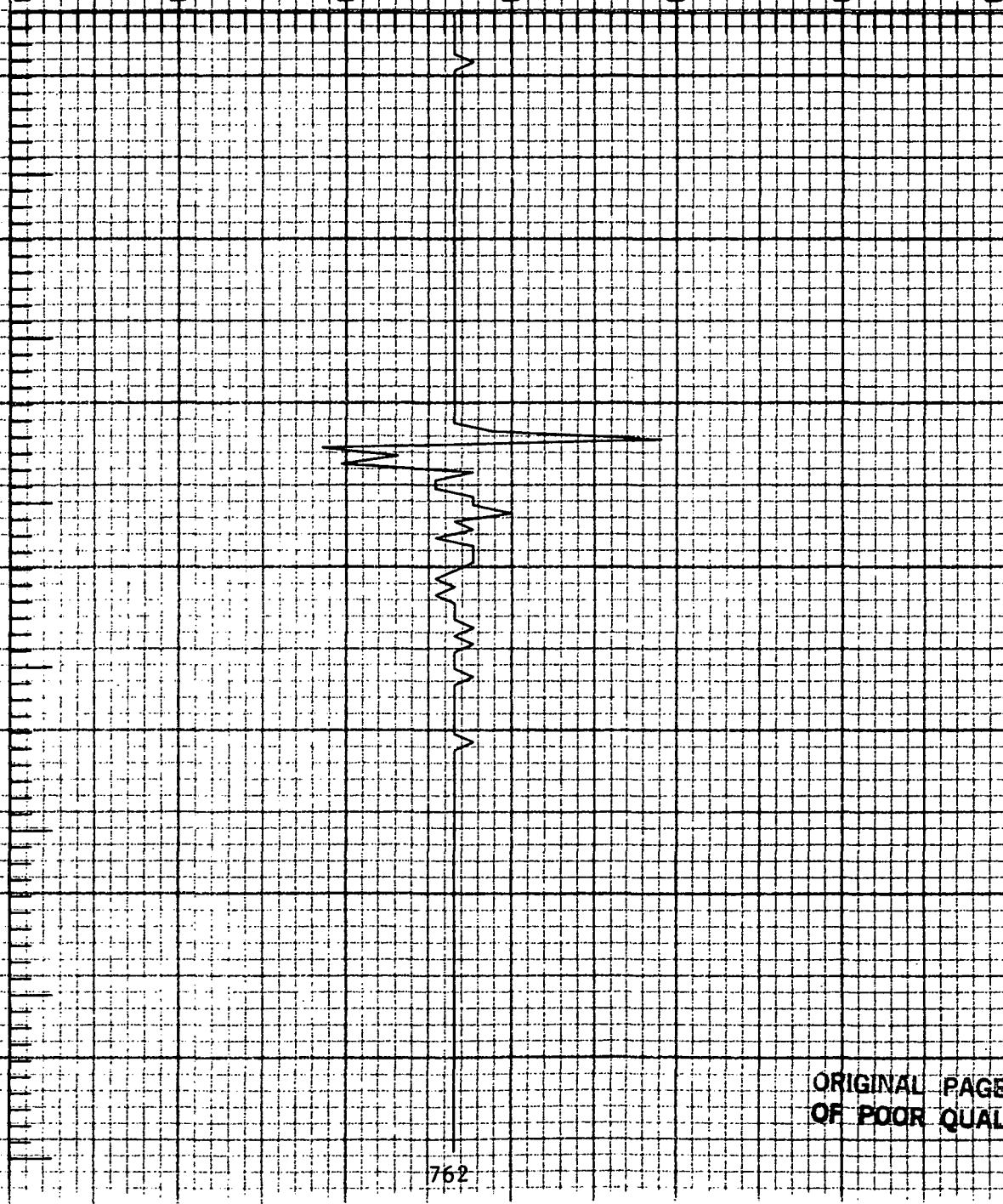
TEST NO. 83-030

RUN NO. 11

N=004

B DOT L T/S

1200  
800  
400  
0  
400  
800  
1200



20:40:08.3049

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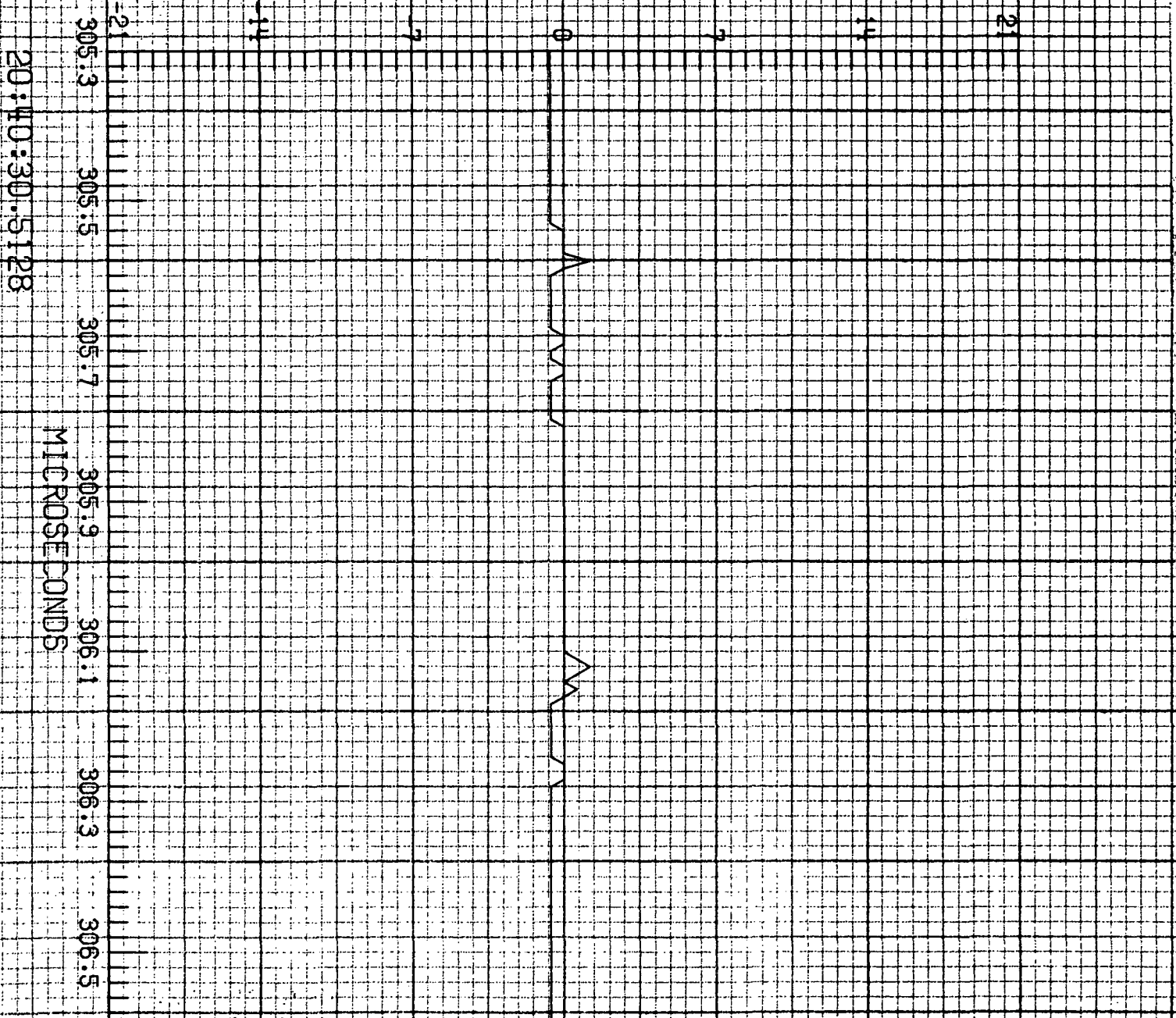
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F106 LIGHTNING TK 8/THOMAS  
RUN NO. 12 S-010

TEST NO. 83-030

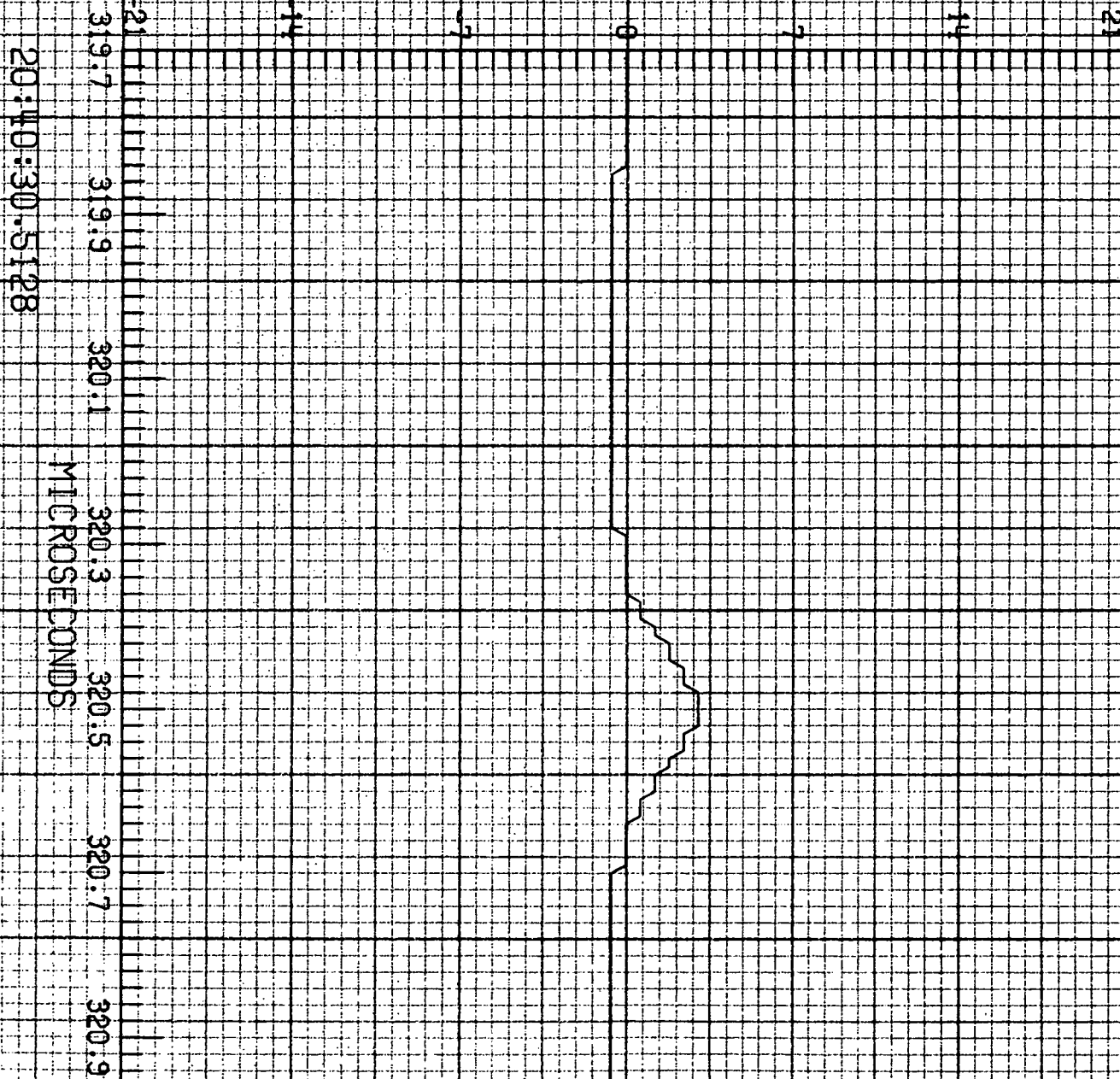
D DOT FWD  $A/m^2$



F106 LIGHTNING TK 8/THOMAS  
RUN NO. 12 S-010

TEST NO. 83-030

D DOT FWD  $A/m^2$



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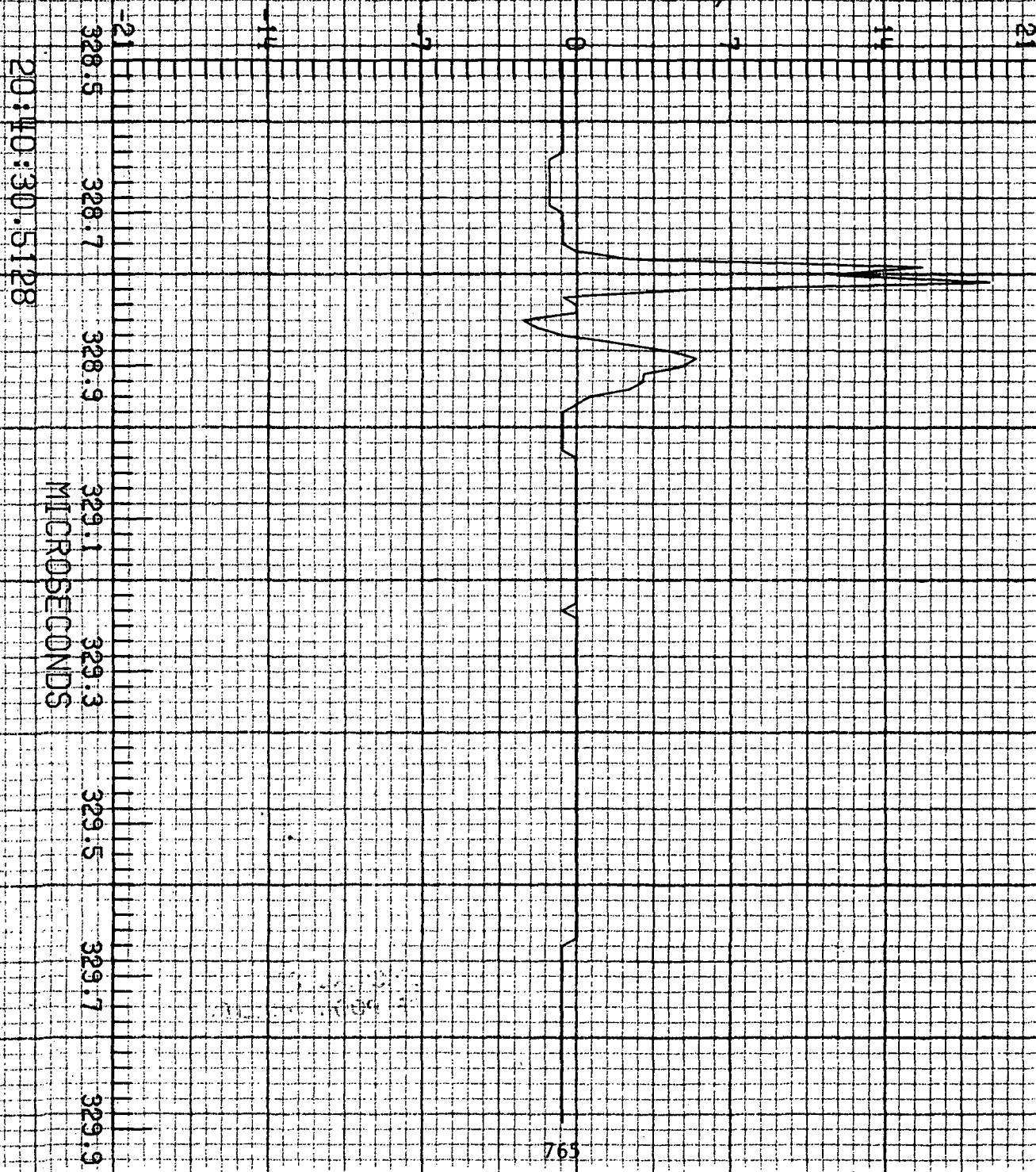
F106 LIGHTNING TK 8/THOMAS

TEST NO. 83-030

RUN NO. 12

S=010

D DOT FWD  $A/m^2$



F106 LIGHTNING/TK-10/M. THOMAS

TEST NO. 83

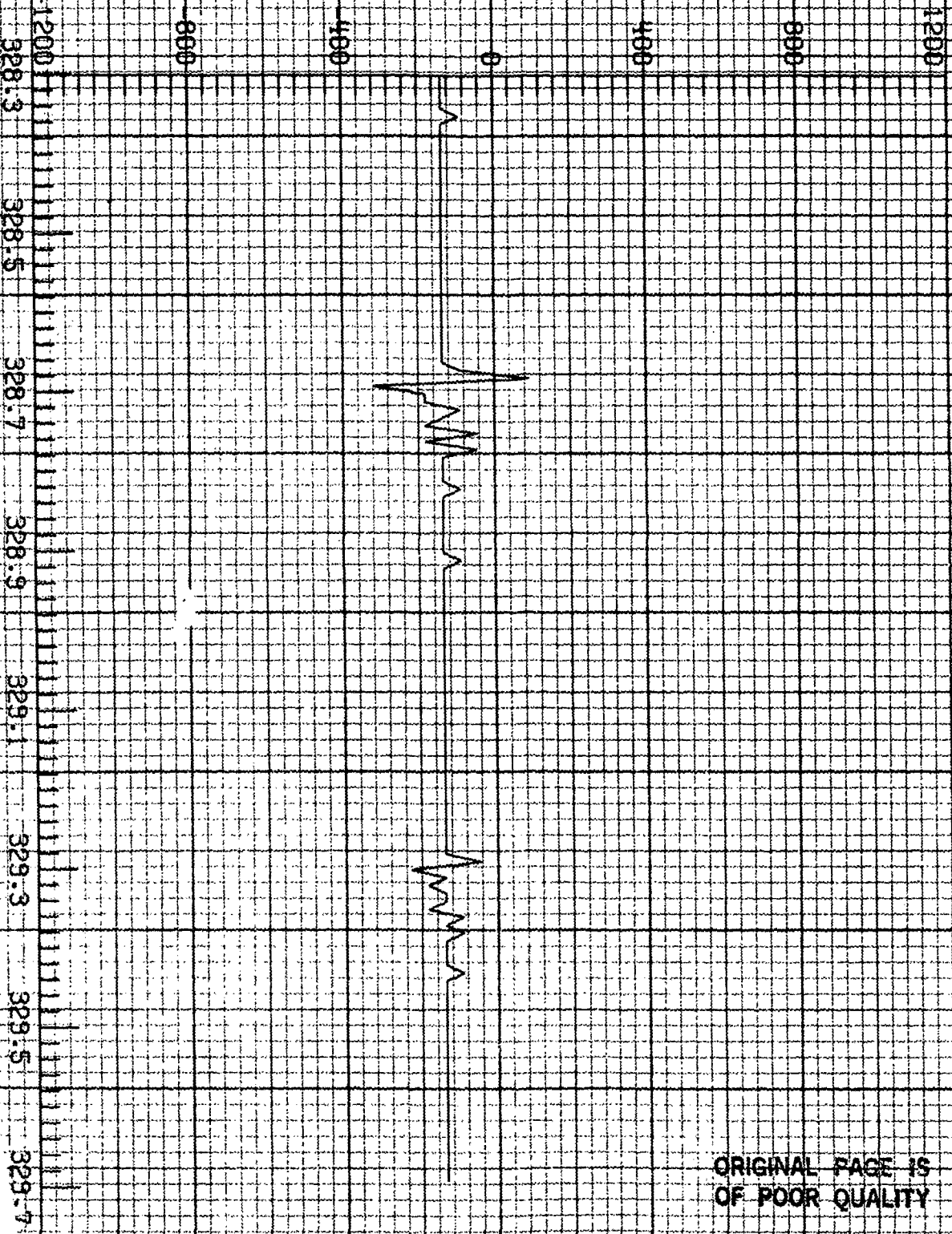
RUN NO. 12

S-010

B DOT L T/S

20:40:30.1088

MICROSECONDS



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F106 LIGHTNING TK 8/THOMAS  
RUN NO. 12 S-010

TEST NO. 83-030

D DOT FWD  $A/m^2$

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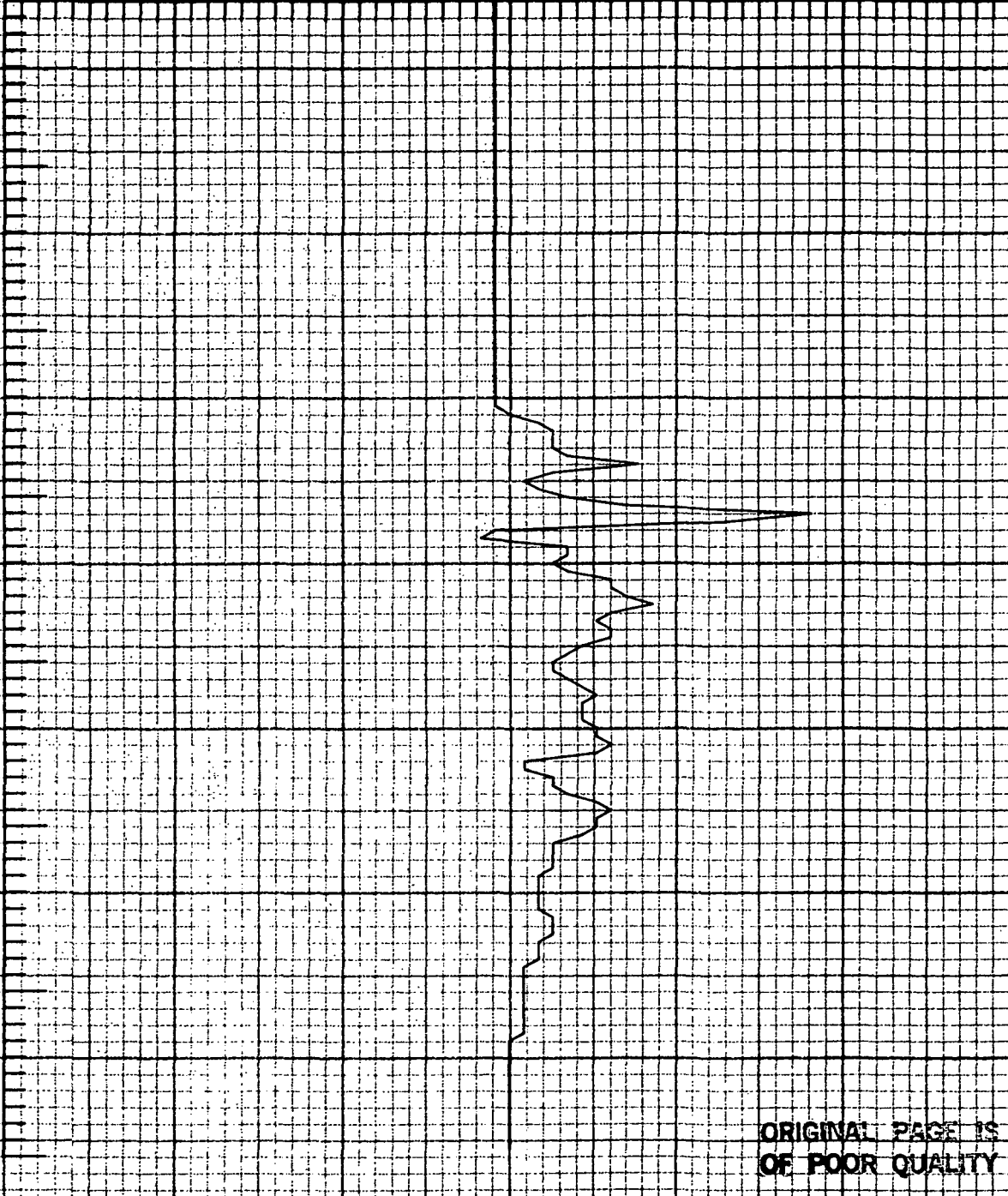
386.5  
386.7  
386.9  
387.1  
387.3  
387.5  
387.7  
387.9

F106 LIGHTNING TK 8/THOMAS  
RUN NO. 13 S-011

TEST NO. 83-030

D DOT FWD  $A/m^2$

-21 0 21



20:41:30.4121

MICROSECONDS

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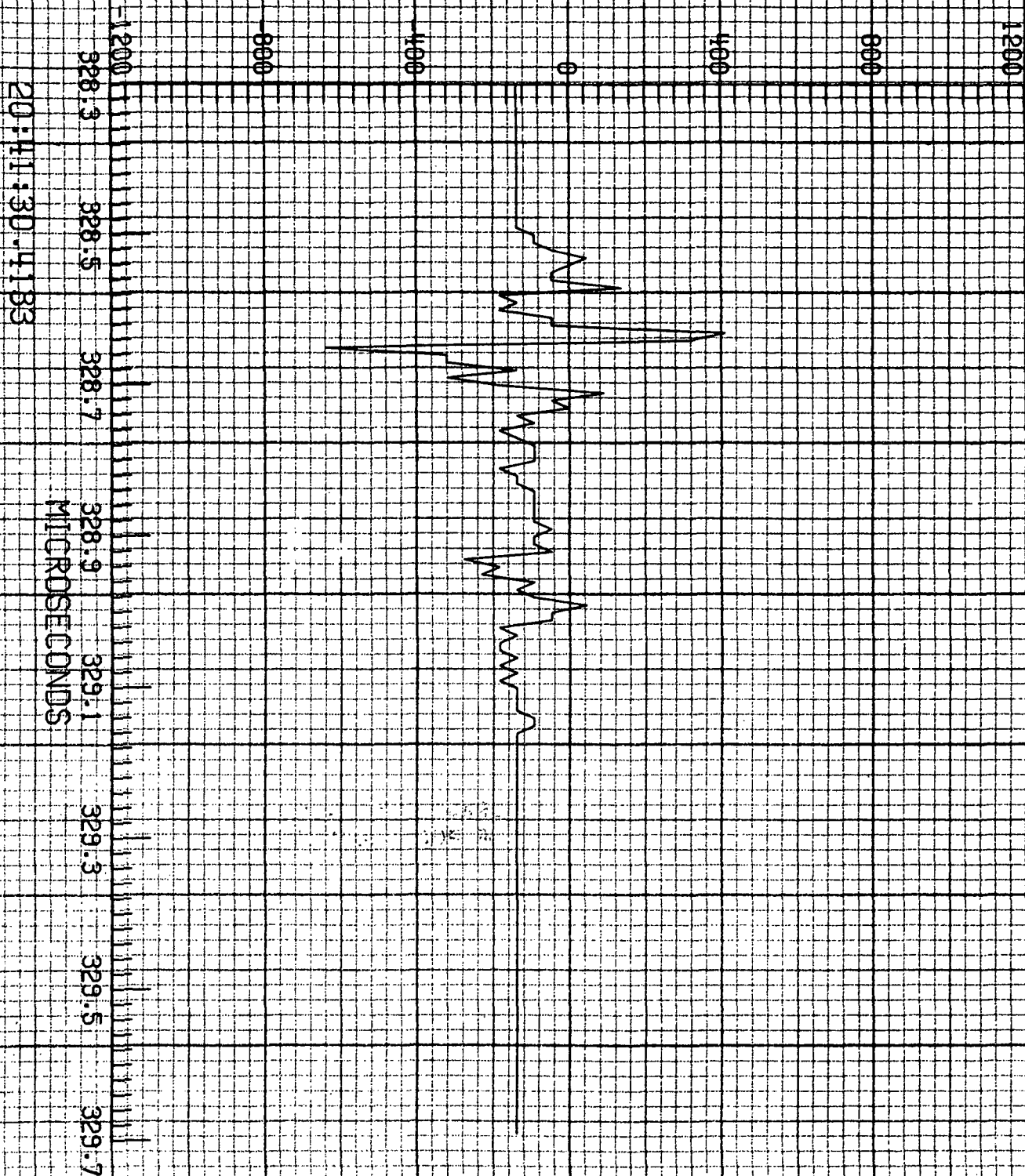
F106 LIGHTNING/TK-10/M.THOMAS

TEST NO. 83-030

RUN NO. 13

S=011

B DOT U T/S



F106 LIGHTNING/TK.10/M.THOMAS

TEST NO. 83-030

RUN NO. 14

N-005

B DOT L T/S

-1200  
-800  
-400  
0  
400  
800  
1200

200.7 200.9 201.1 201.3 201.5 201.7 201.9  
MICROSECONDS  
20:52:26.2550



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F106 LIGHTNING/TK-10/M.THOMAS

TEST NO. 83-030

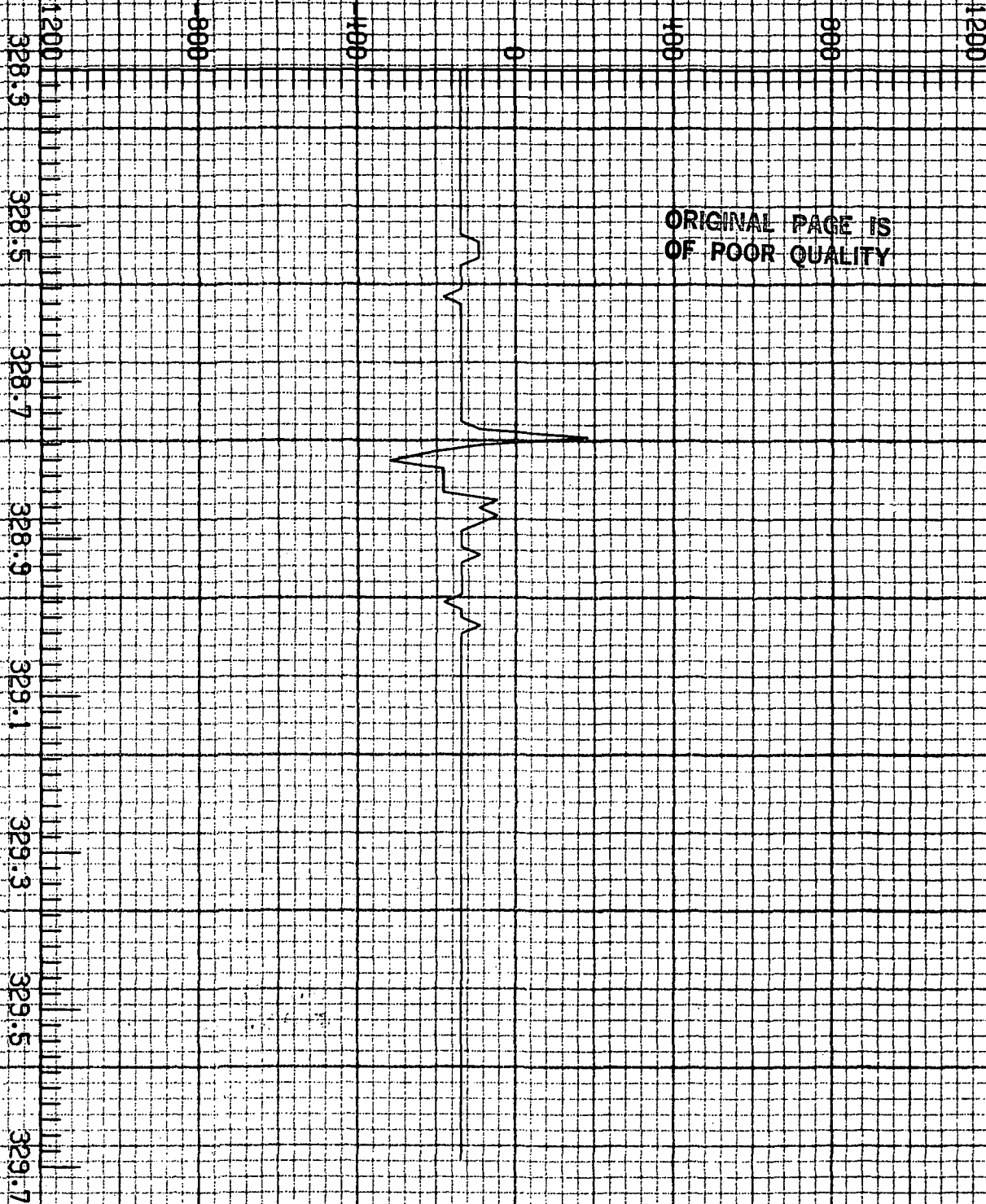
RUN NO. 14

N-005

B DOT L T/S

20:52:25.2550

MICROSECONDS



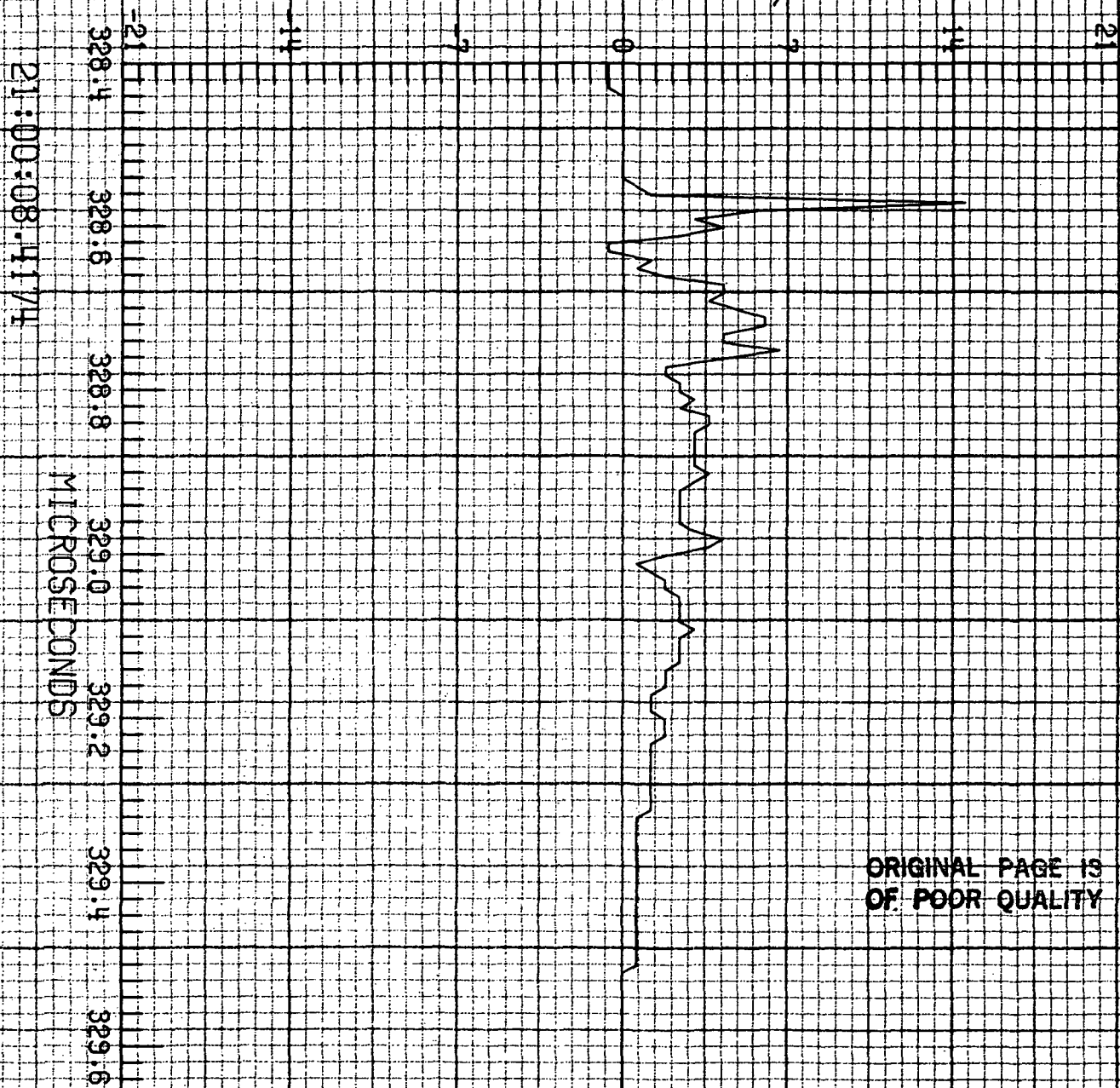
-106 LIGHTNING TK 8/THOMAS

TEST NO. 83-030

RUN NO. 15

N=006

D DOT FWD  $A/m^2$





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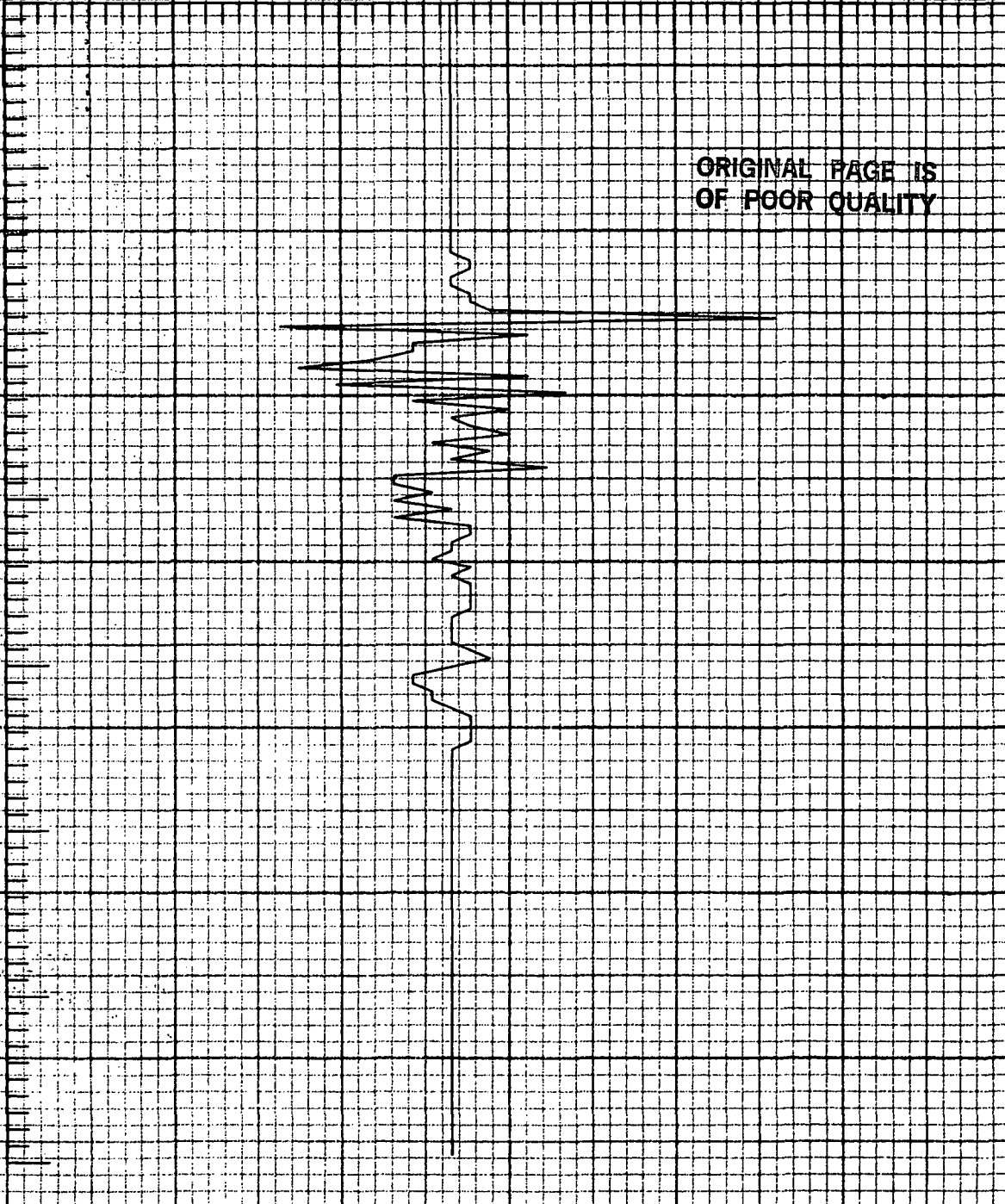
F106 LIGHTNING/TK.10/M.THOMAS  
RUN NO. 15 N-006

TEST NO. 83-030

B DOT L T/S

1200  
800  
400  
0  
400  
800  
1200

ORIGINAL PAGE IS  
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21:00:08.4172

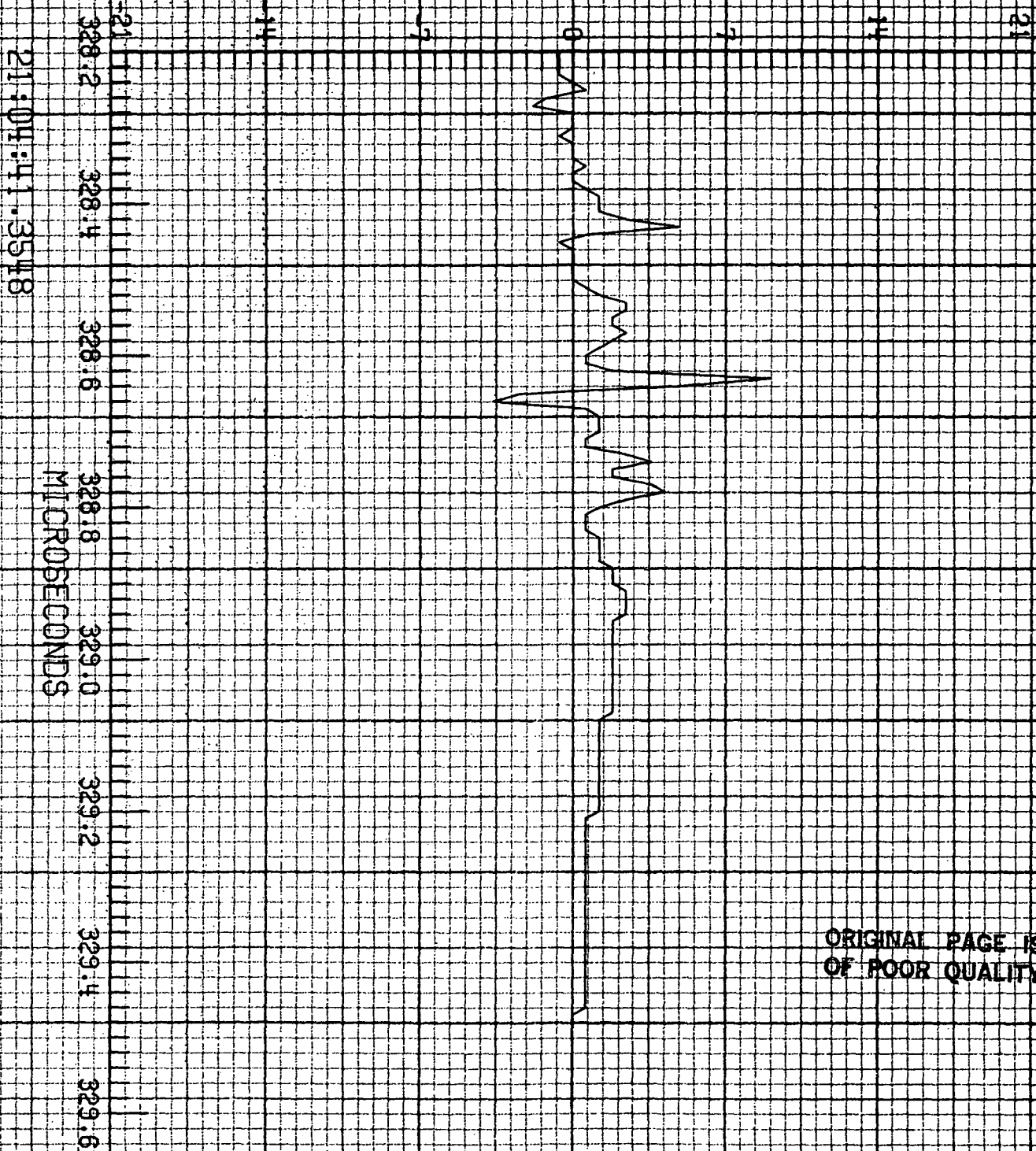
106 LIGHTNING TK 8/THOMBS

TEST NO. 83-03

RUN NO. 16

S-012

D DOT FWD  $A/m^2$



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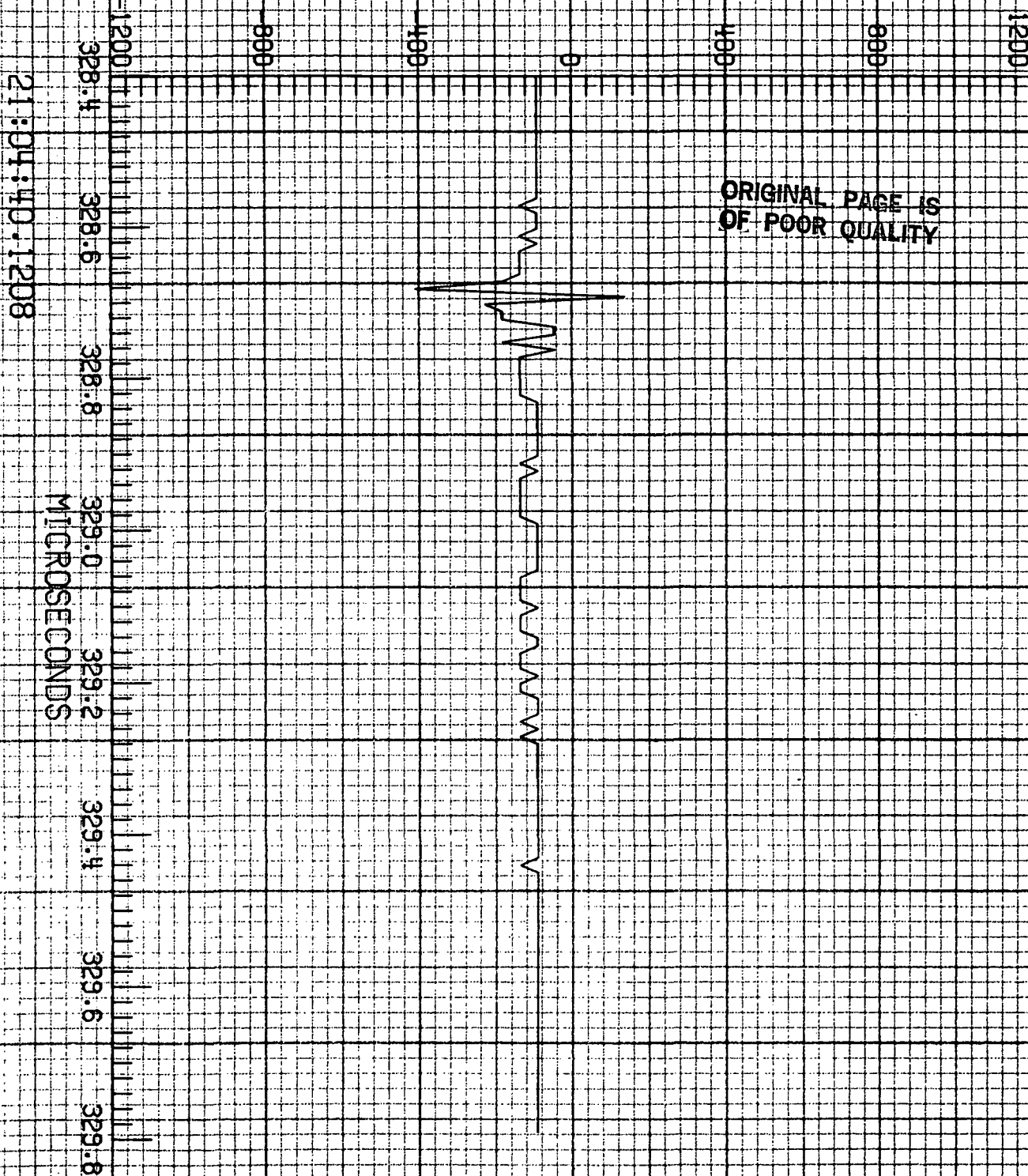
F106 LIGHTNING/TK.10/M.THOMAS

TEST NO. 88-030

RUN NO. 16

S-012

B DOT L T/S



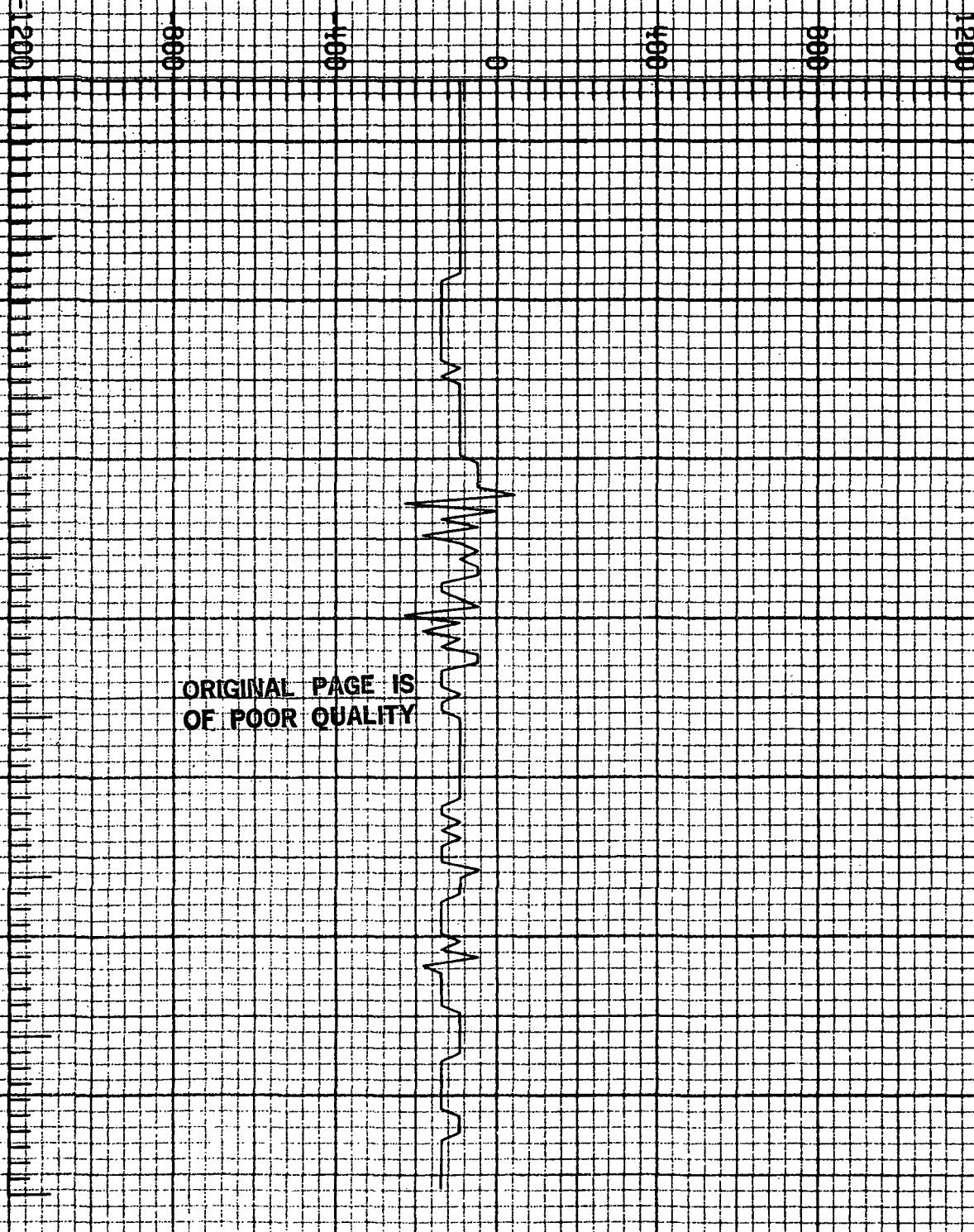
F106 LIGHTNING/TK-10/M. THOMAS

TEST NO. 83-030

RUN NO. 16

S-012

B DOT L T/S



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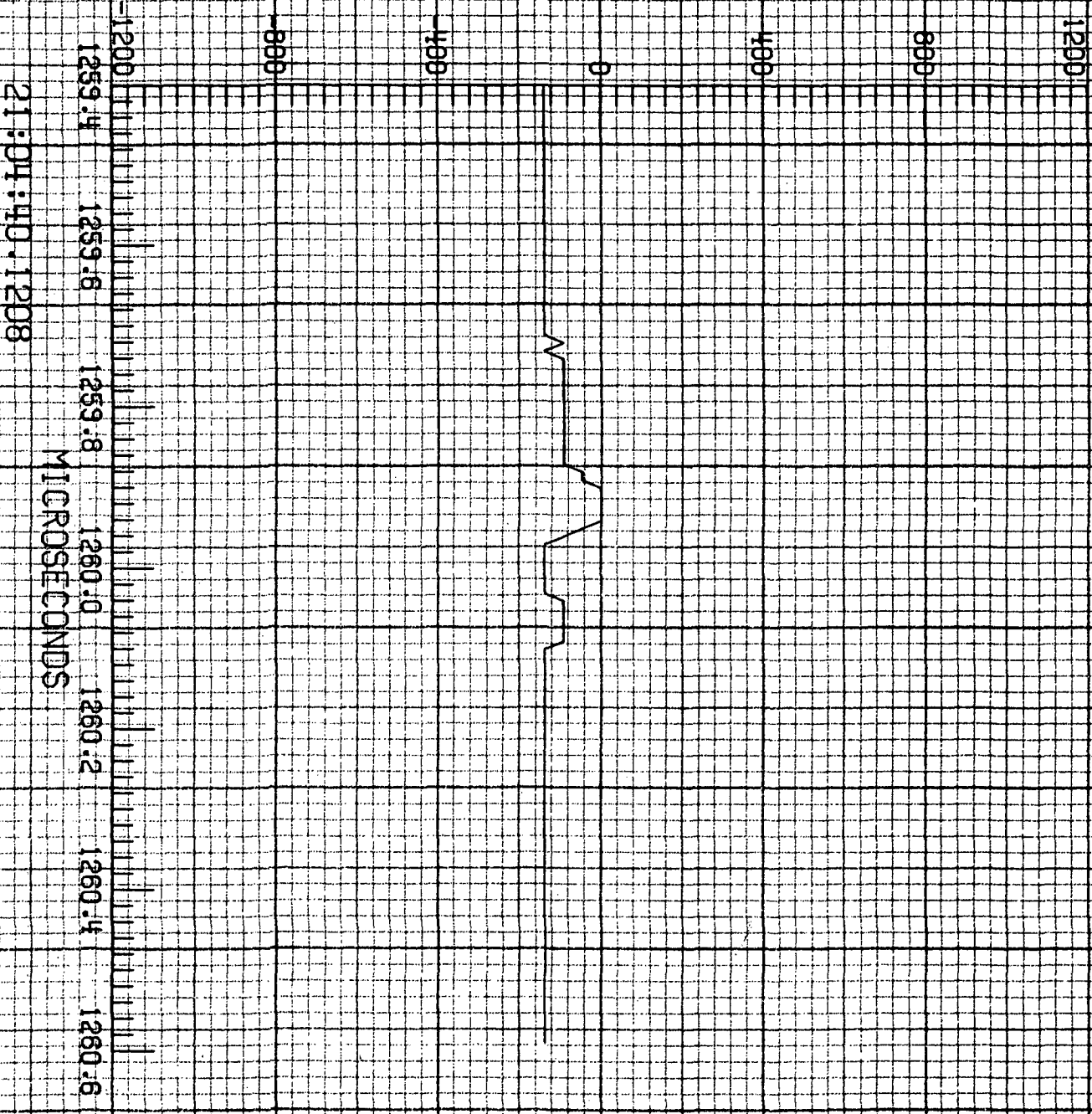


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RUN NO. 16 S-012

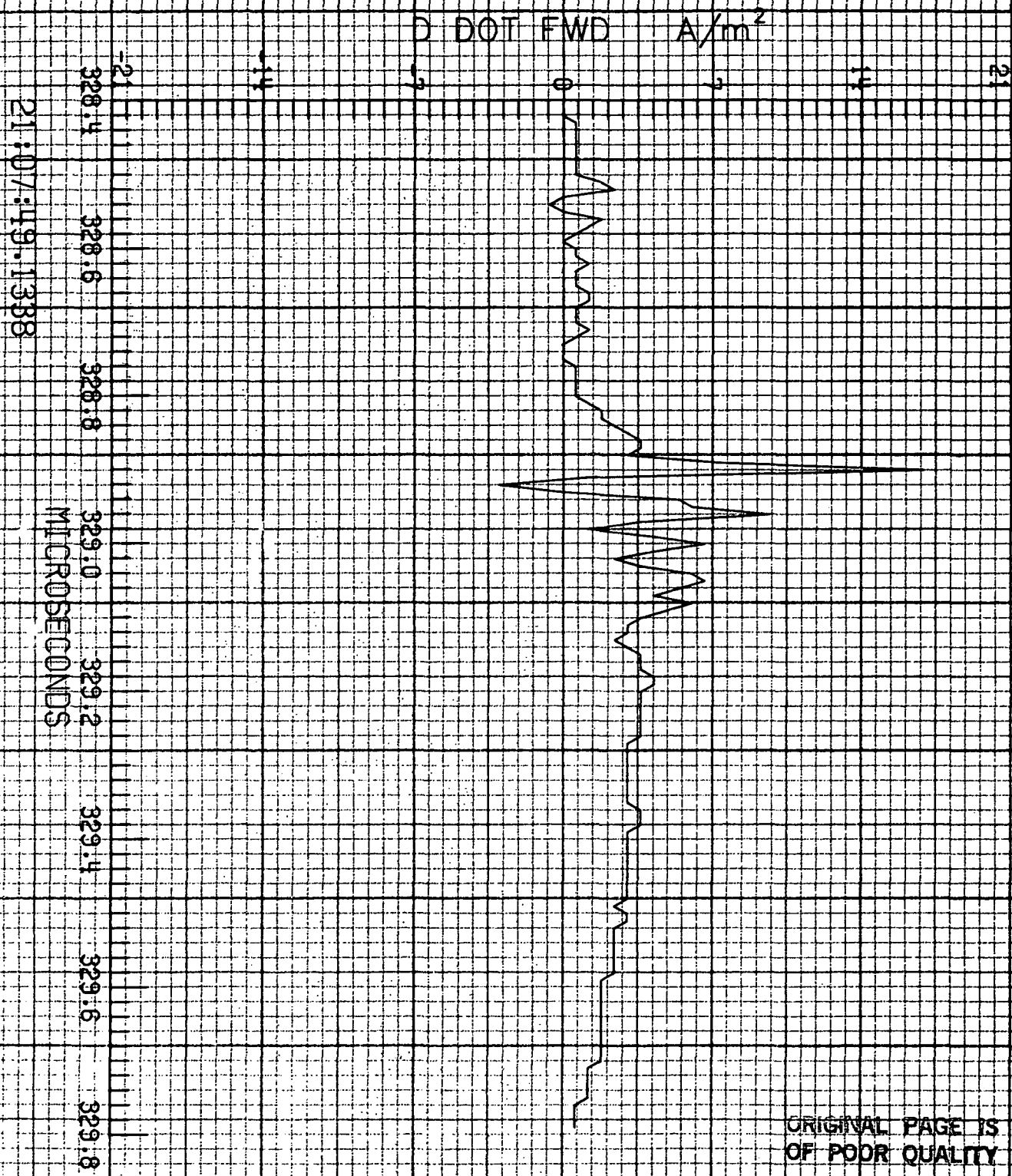
TEST NO. 83-030

B DOT L T/S



F106 LIGHTNING TK 8/THOMAS  
RUN NO. 17 N=007

TEST NO. 83-030



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F106 LIGHTNING/TK-10/M. THOMAS

TEST NO. 83-030

RUN NO. 17

N-007

B DOT L T/S

1200  
800  
400  
0  
400  
800  
1200

328.4

328.6

328.8

329.0

329.2

329.4

329.6

329.8

21:07:19.0857

MICROSECONDS

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F106 LIGHTNING/TK 10/M.THOMAS

TEST NO. 83-032

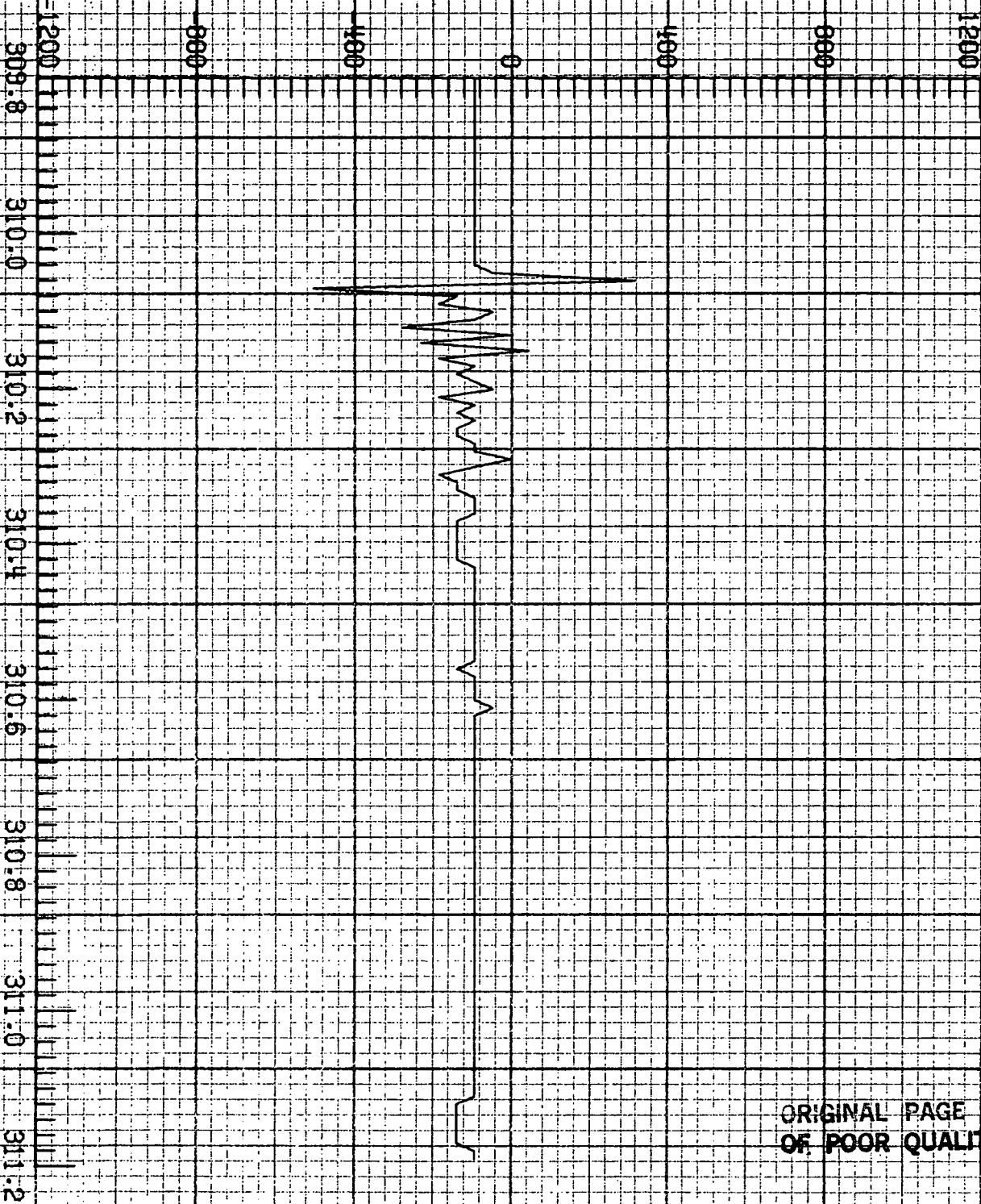
RUN NO. 1

N-001

B DOT L I/S

16:05:35.5307

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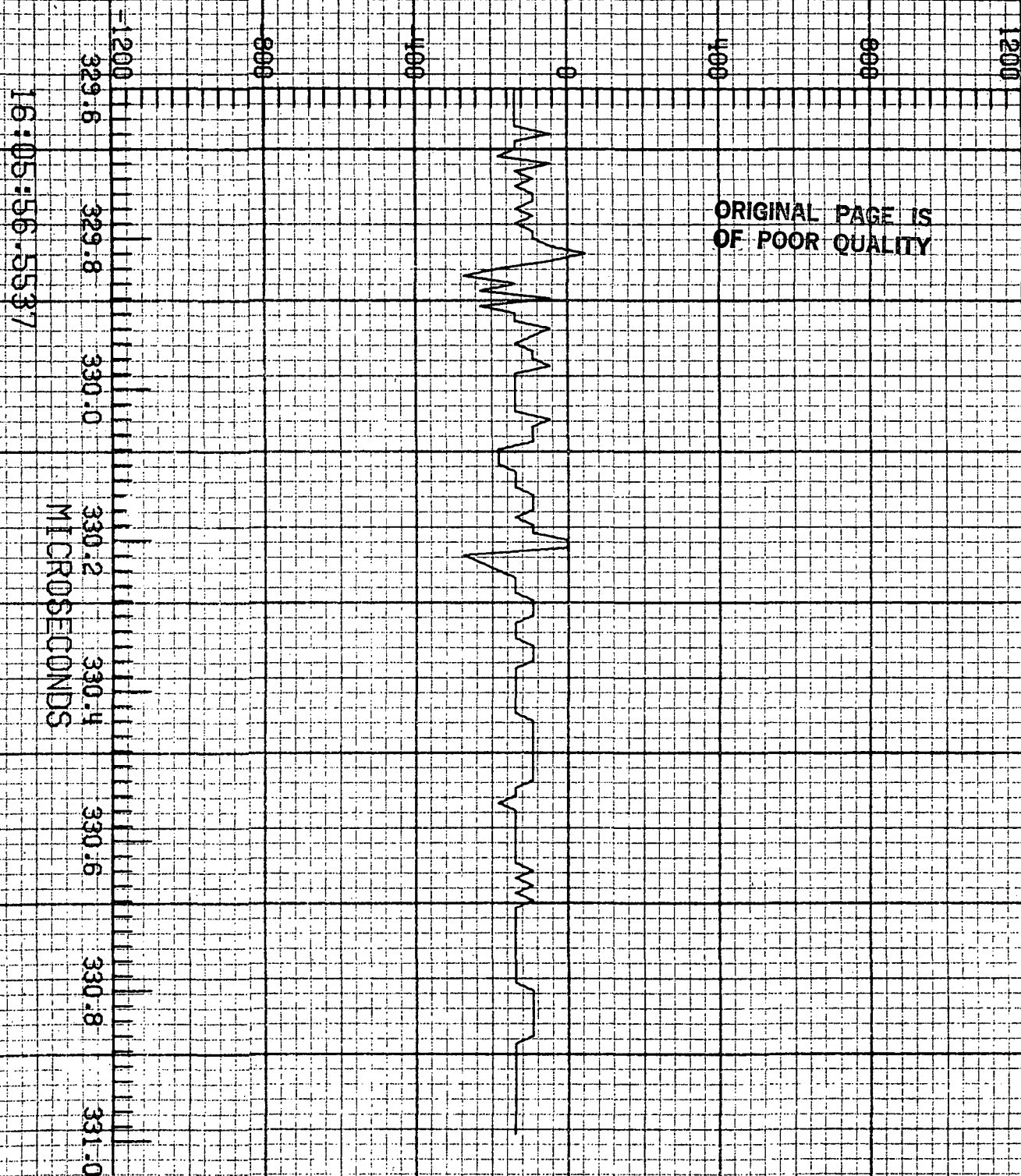
F106 LIGHTNING/TK 10/M.THOMAS

TEST NO. 83-032

RUN NO. 2

N-002

B DOT L T/S



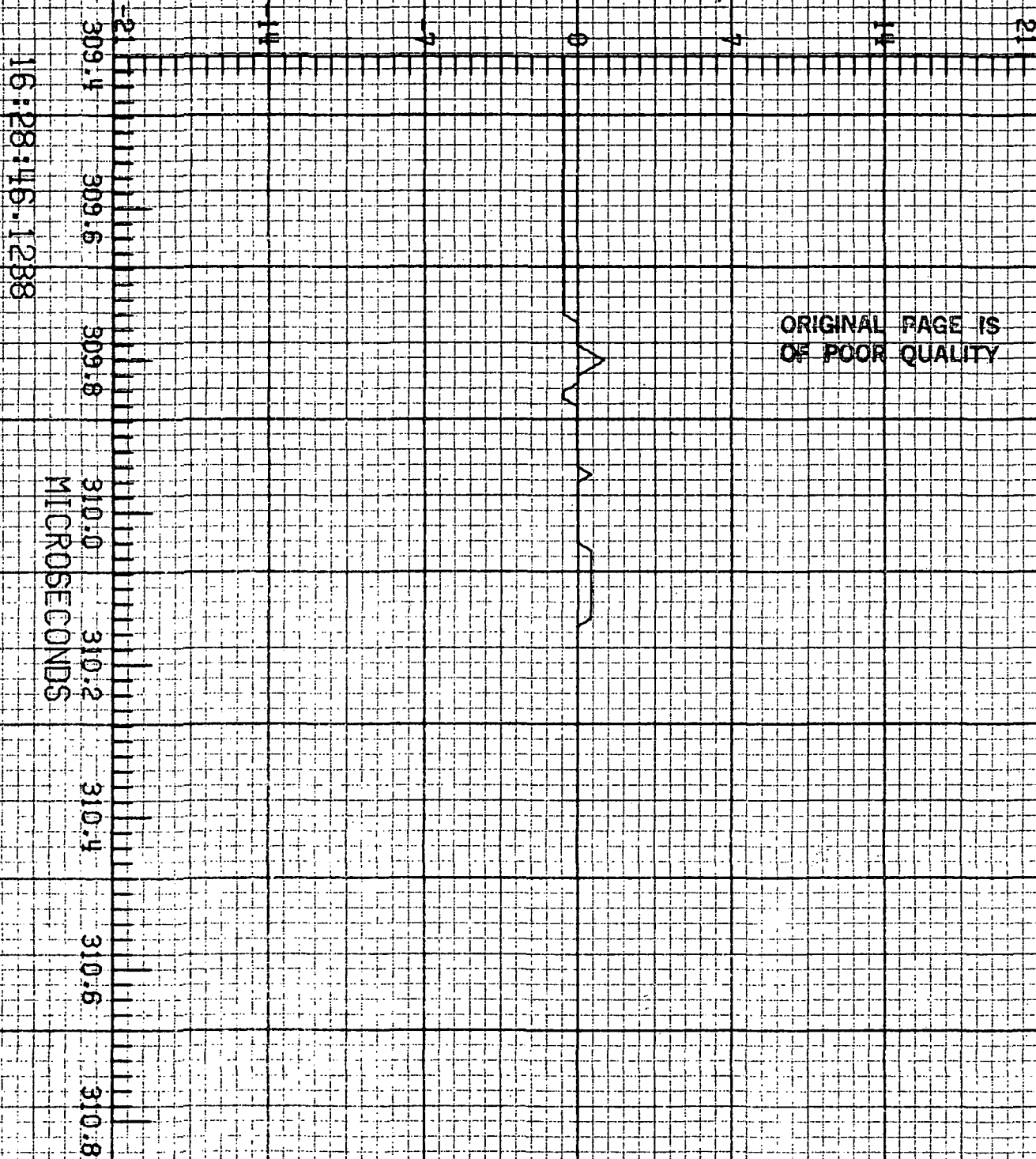
F106 LIGHTNING/TK 8/M. THOMAS

TEST NO. 83-032

RUN NO. 3

N-003

D DOT FWD  $A/m^2$



F106 LIGHTNING/TK 10/M. THOMAS

TEST NO. 83-032

RUN NO. 3

N-003

B DOT L T/S

16:28:46.0376

MICROSECONDS

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TEST NO. 83-032

S-002

D DOT FWD

 $A/m^2$ 

16:32:46.8852

# MICROSECONDS

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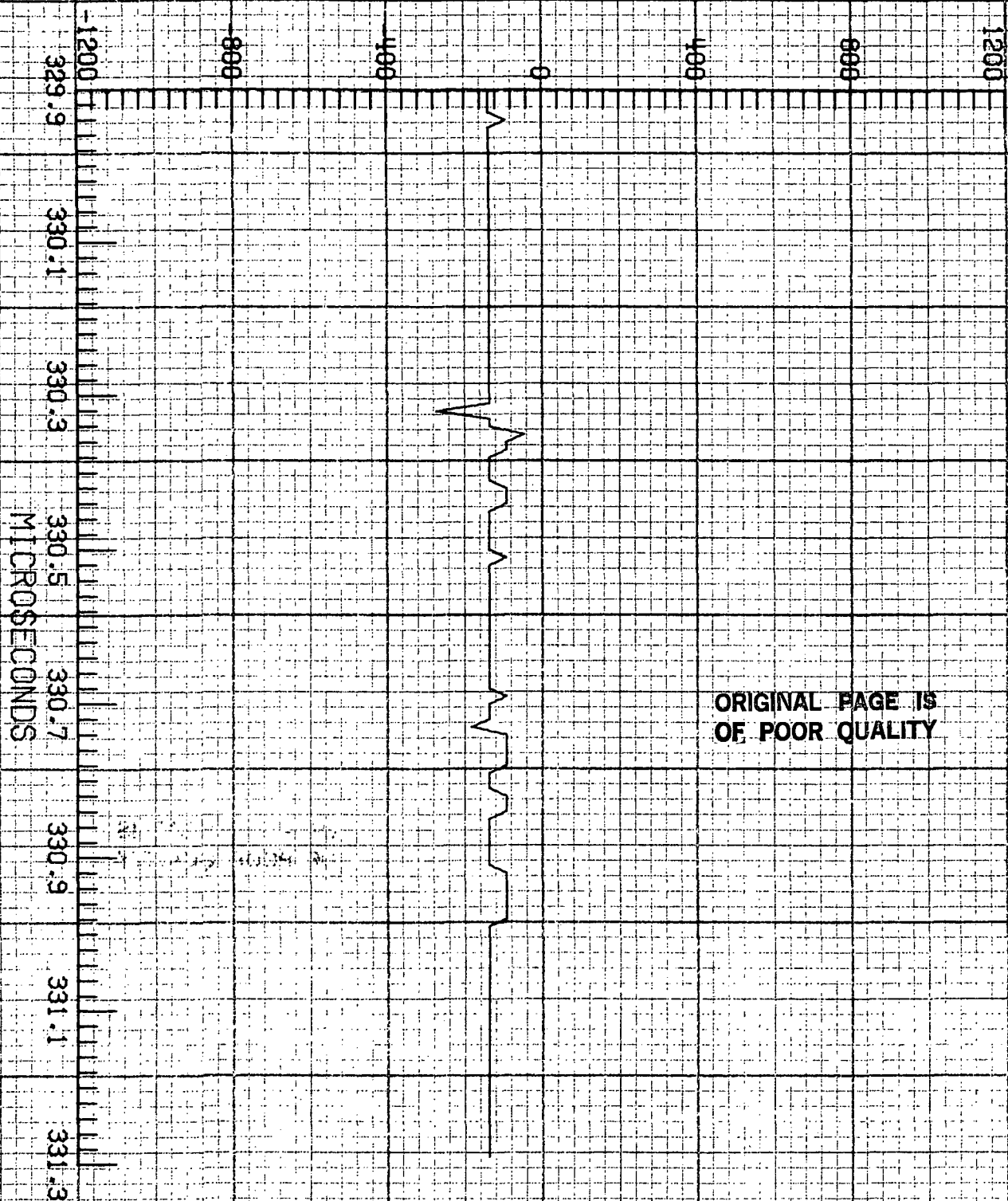
F106 LIGHTNING/TK 10/M. THOMAS

TEST NO. 83-032

RUN NO. 4

S-002

B DOT L T/S



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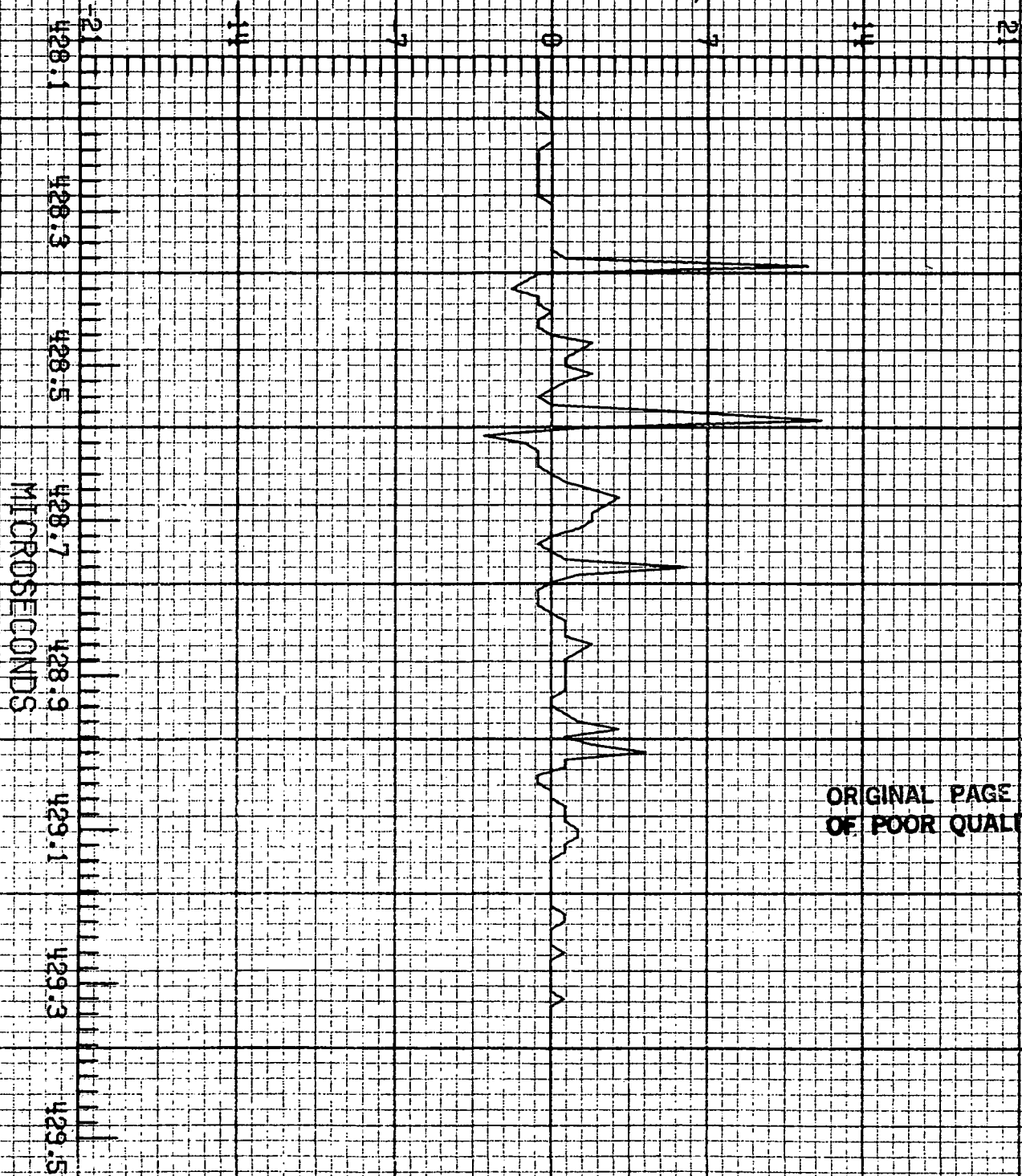
F106 LIGHTNING/TK 8/M. THOMAS

TEST NO. 83-032

RUN NO. #

S-002

D DOT FWD  $A/m^2$



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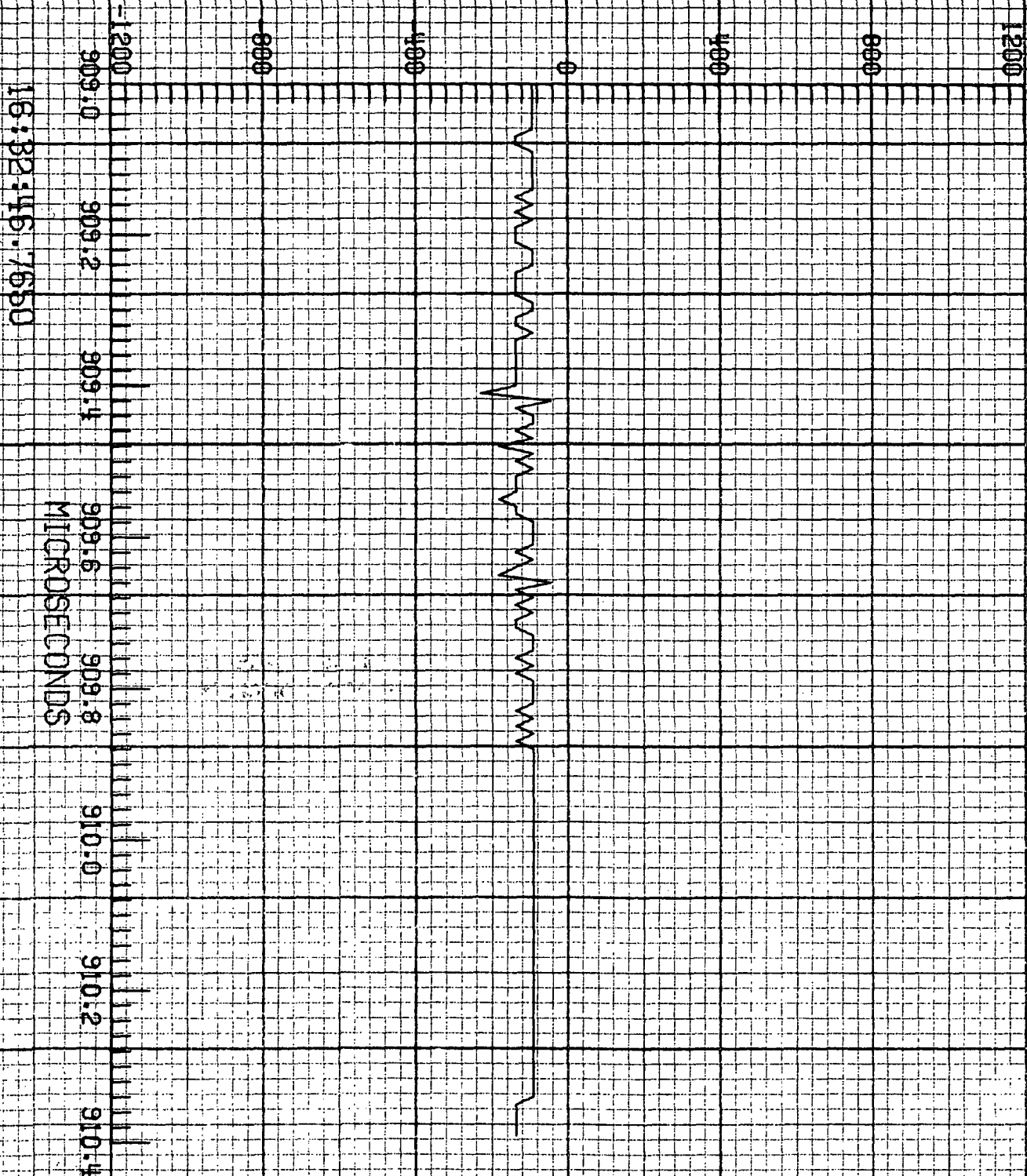
F106 LIGHTNING/TK 10/M.THOMAS

TEST NO. 83-032

RUN NO. #

S=002

B DOT L T/S



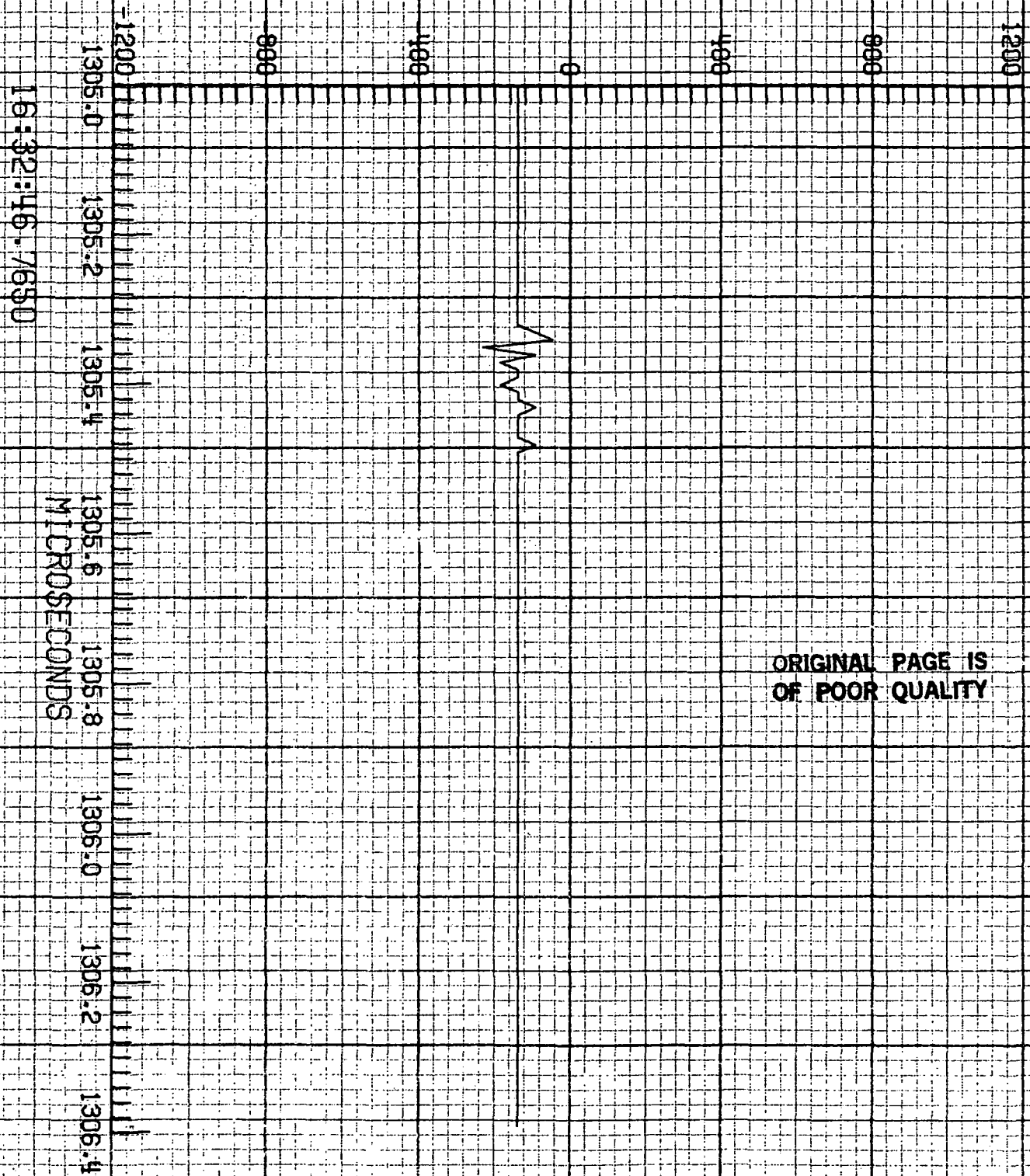
F106 LIGHTNING/TK 10/M.THOMAS

TEST NO. 83-032

RUN NO. 4

S-002

B DOT L T/S



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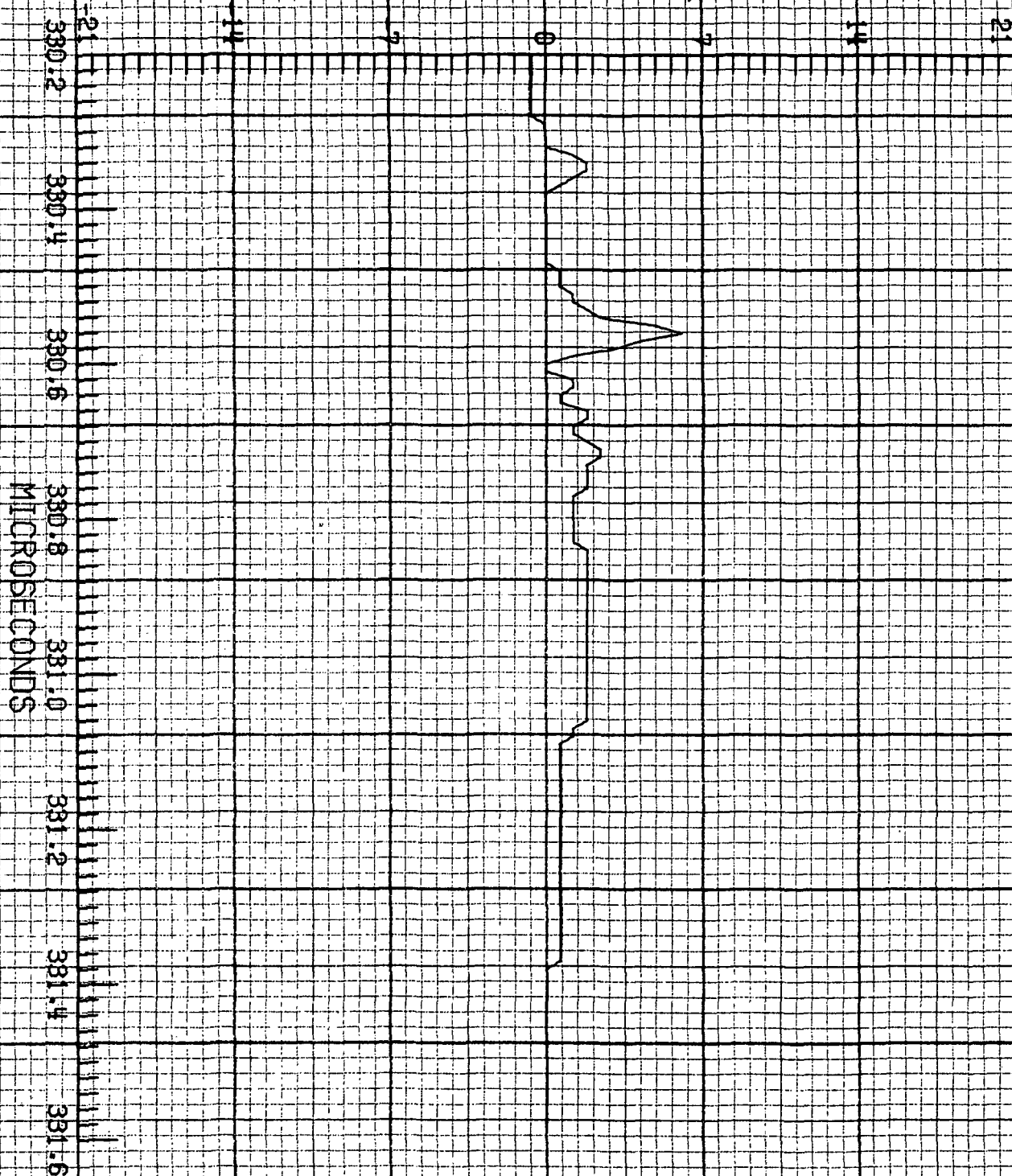


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F106 LIGHTNING/TK 8/M. THOMAS  
RUN NO. 5 S-003

TEST NO. 83-032

D DOT FWD  $A/m^2$



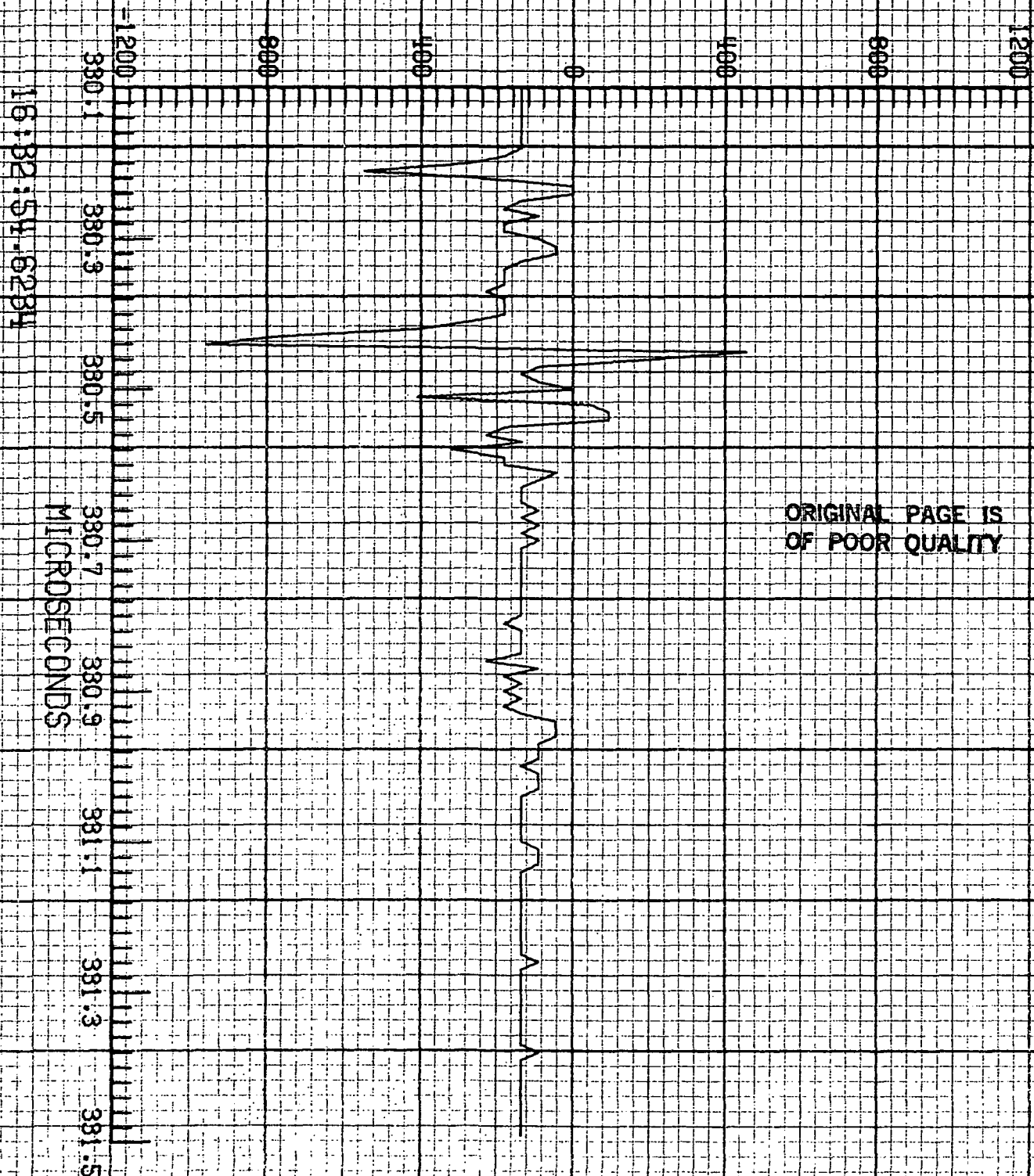
F106 LIGHTNING/TK 10/M.THOMAS

TEST NO. 83-032

RUN NO. 5

S-003

R DOT I T/S



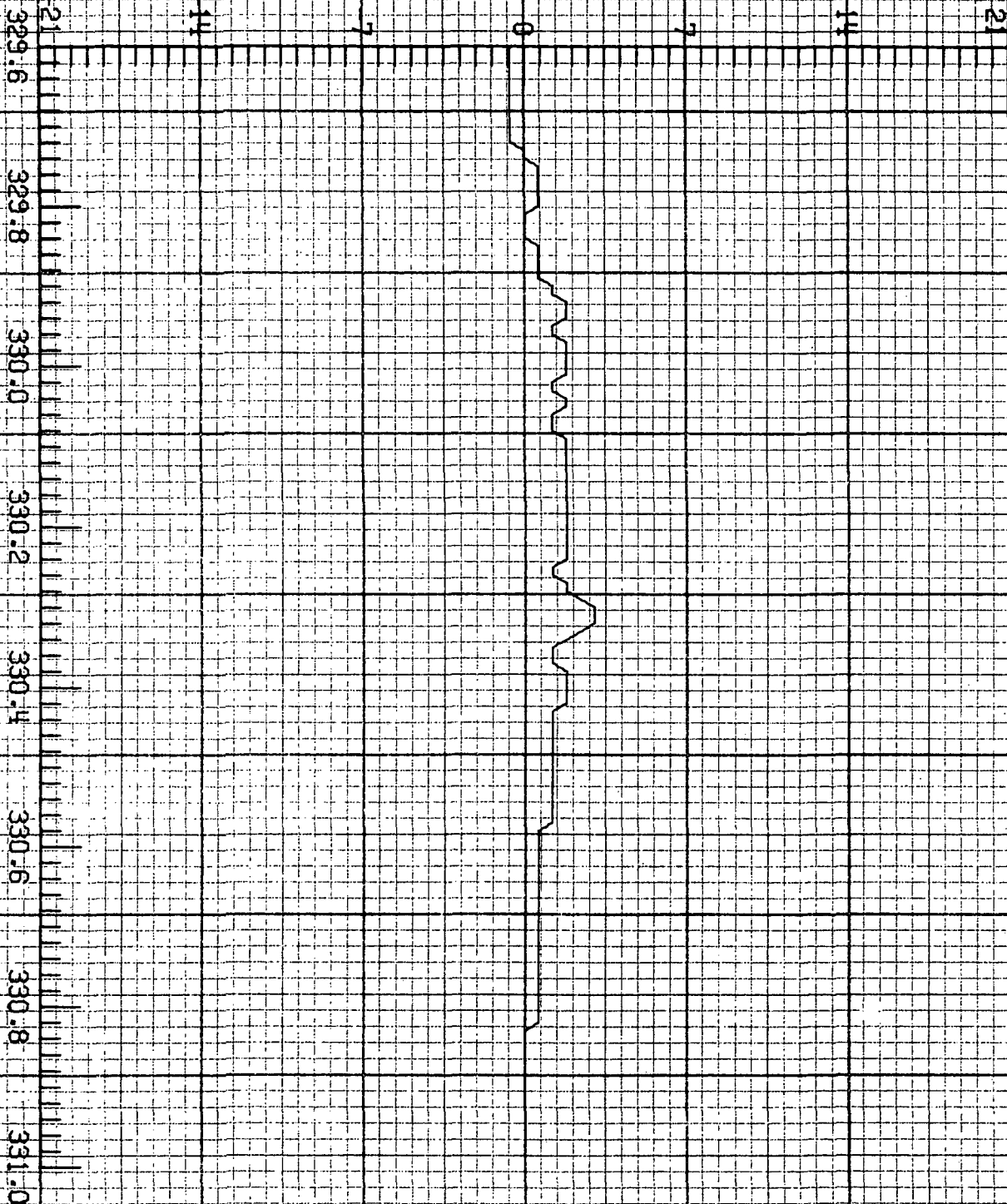
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F106 LIGHTNING/TK 8/M. THOMAS  
RUN NO. 6 S-004

TEST NO. 83-032

D DOT FWD  $A/m^2$



F106 LIGHTNING/TK 10/M.THOMAS

TEST NO. 83-032

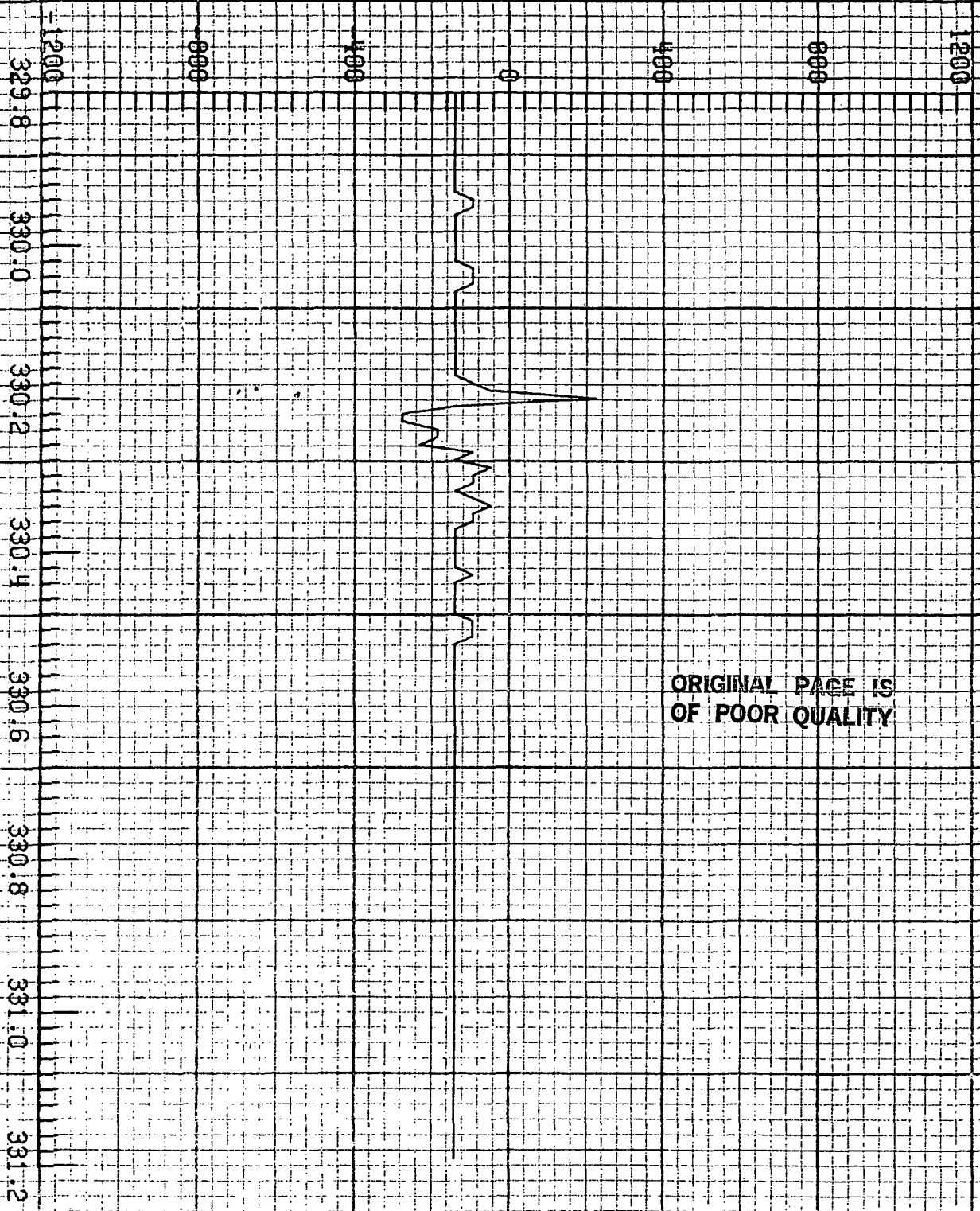
RUN NO. 5

S-004

B DOT L T/S

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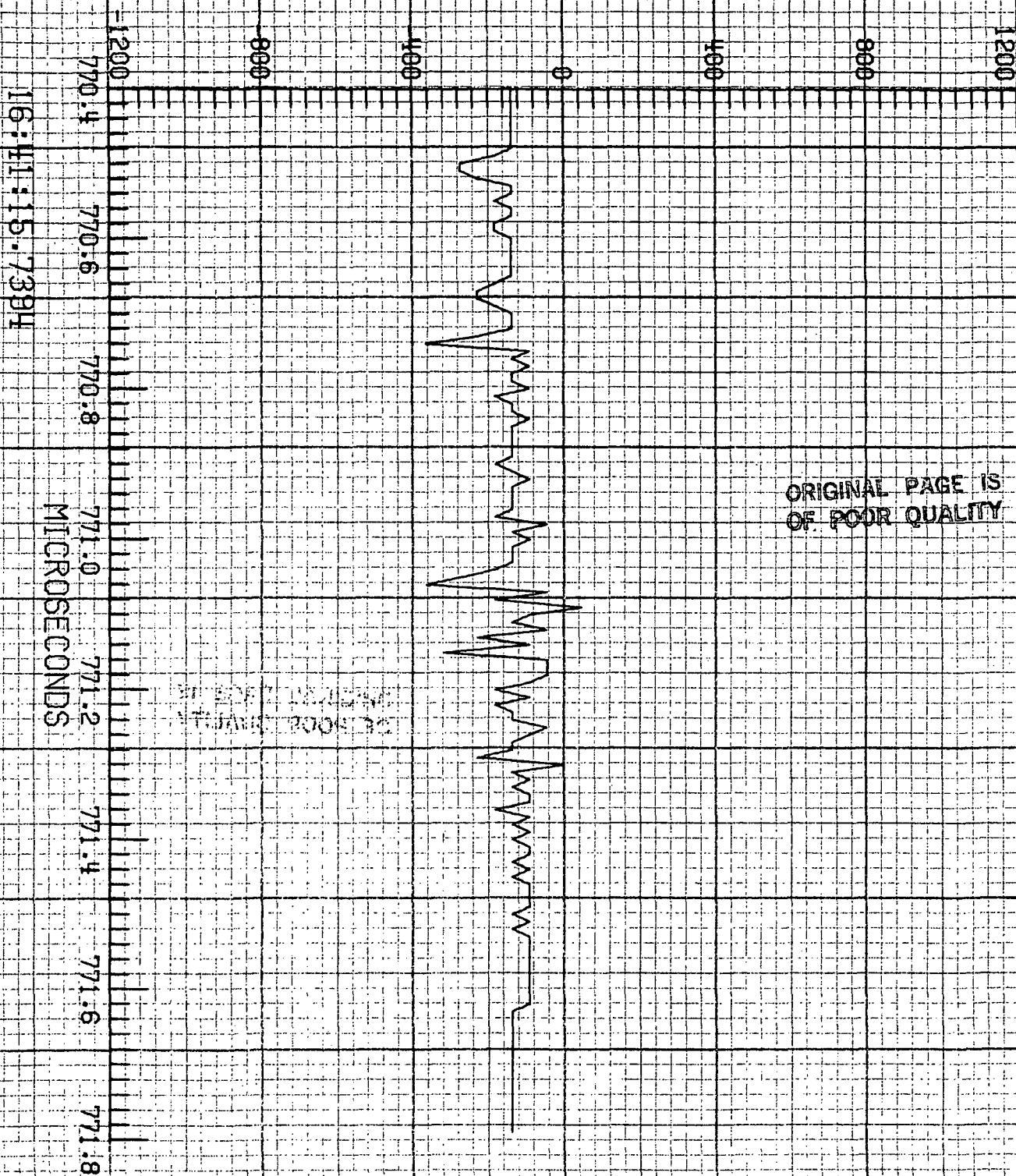
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TEST NO. 83-032

RUN NO. 6

S=004

B DOT L I/S





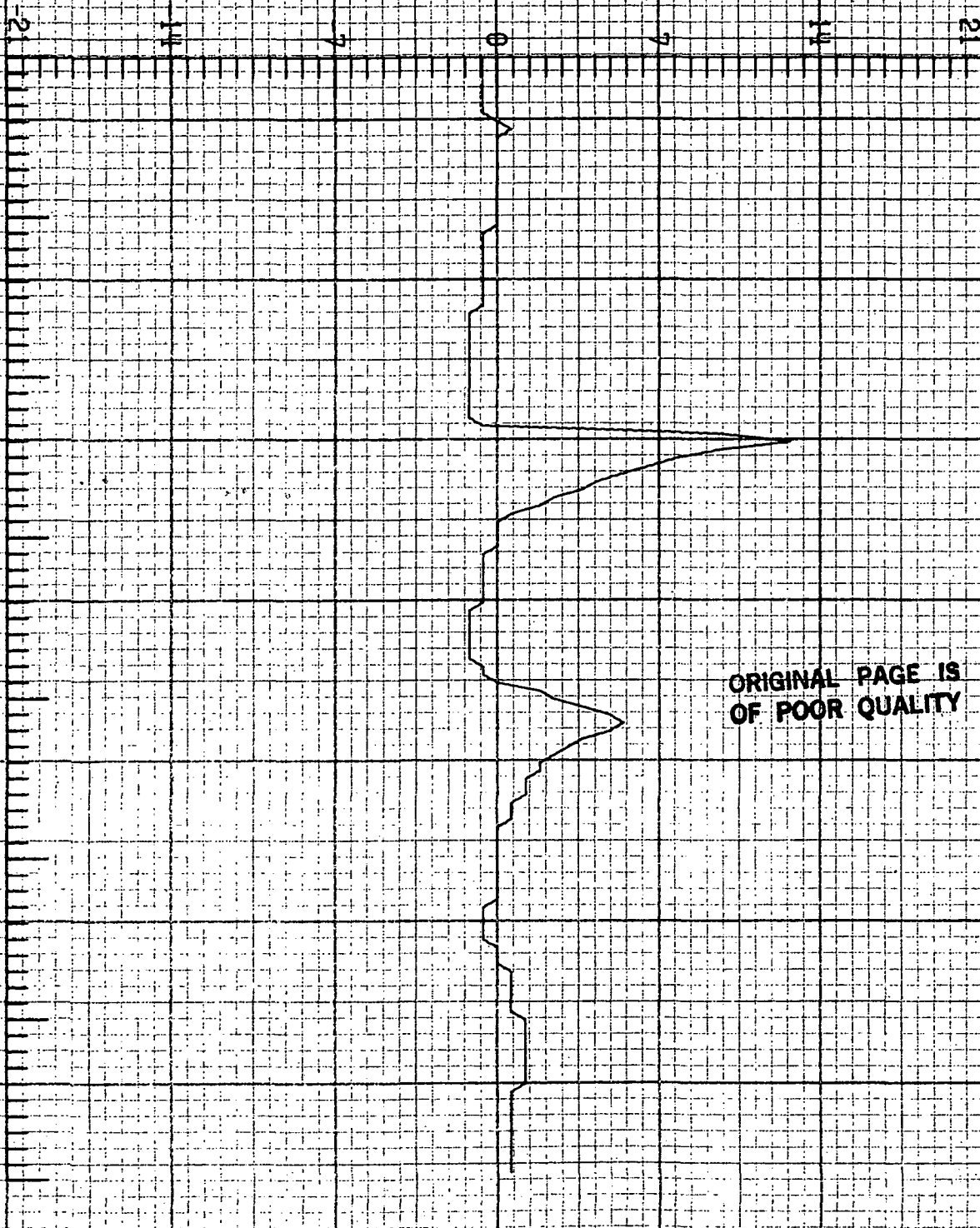
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TEST NO. 83-032

RUN NO. 6

S-004

D DOT FWD  $A/m^2$



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F106 LIGHTNING/TK 10/M. THOMAS

TEST NO. 83-032

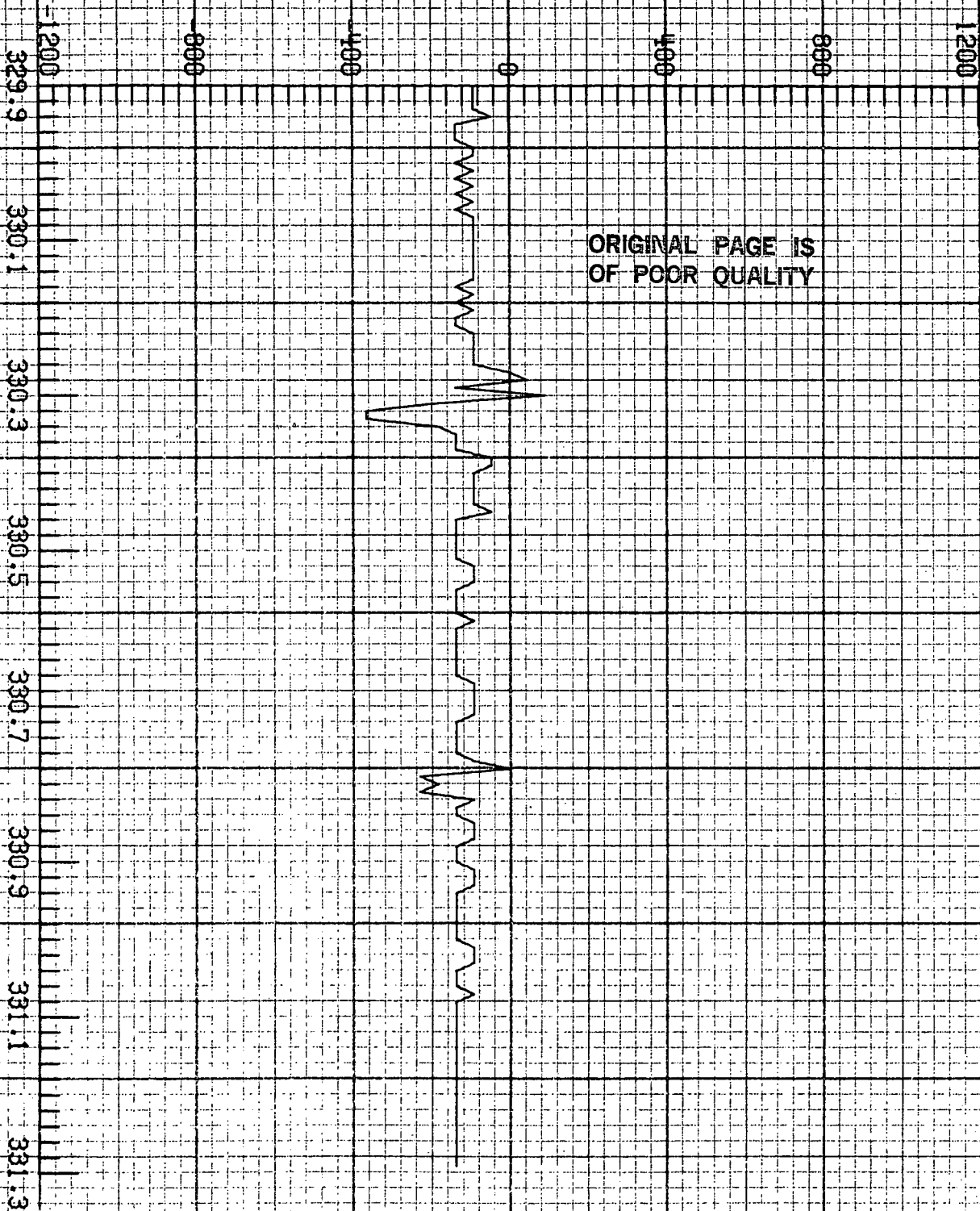
RUN NO. 7

N-004

R DOT L T/S

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MICROSECONDS



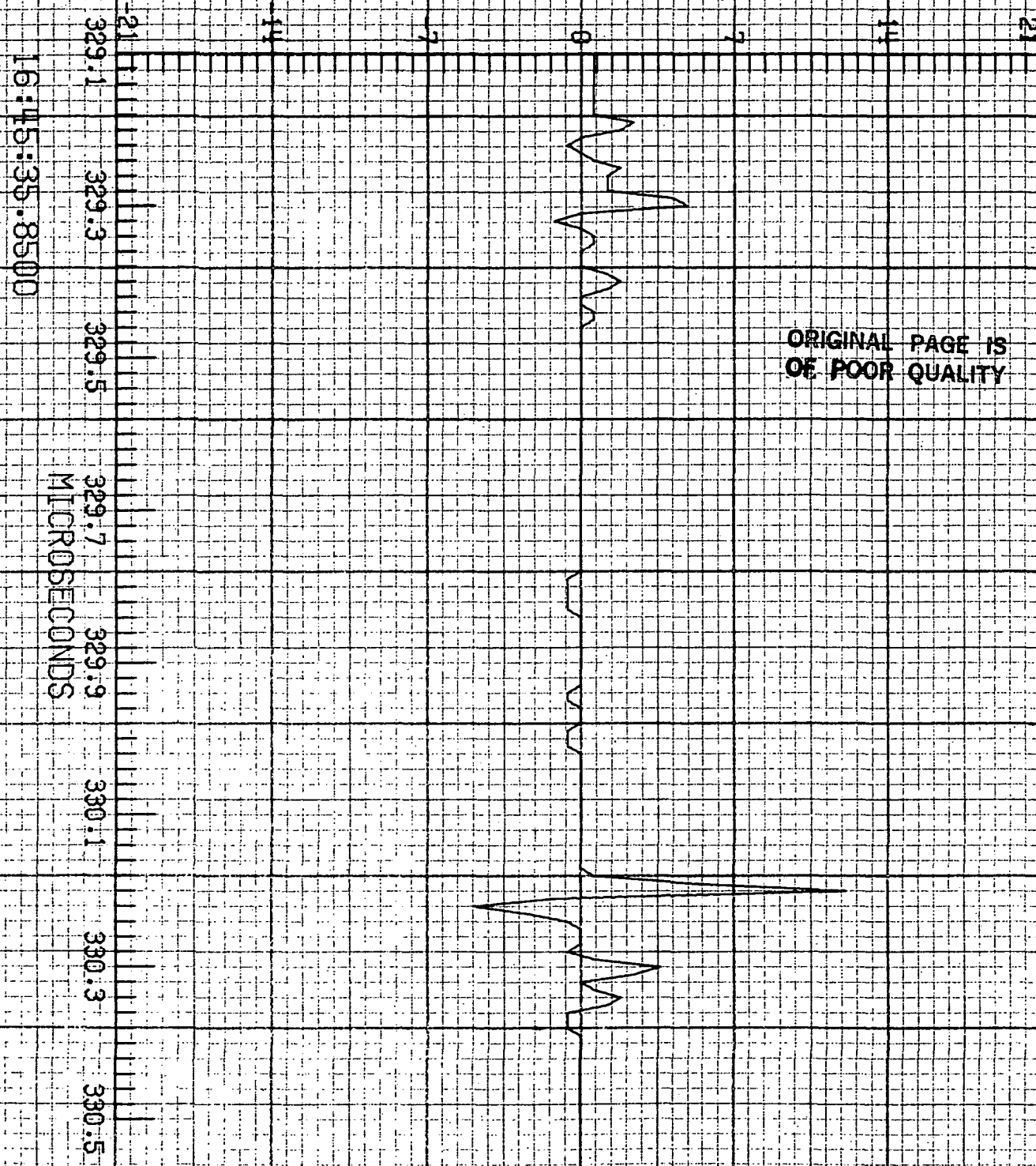
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TEST NO. 83-032

RUN NO. 8

S-005

D DOT FWD  $A/m^2$



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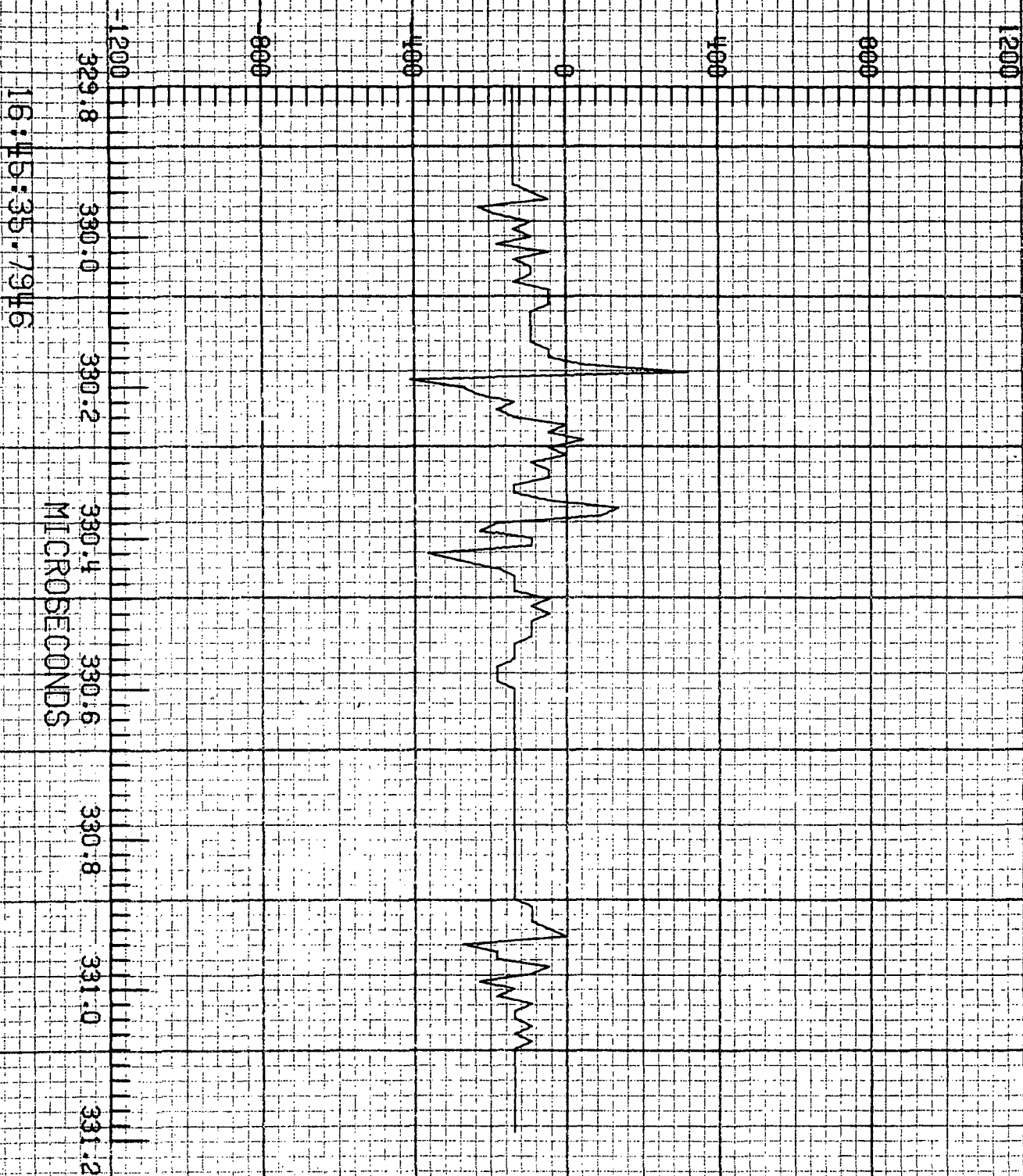
F106 LIGHTNING/TK 10/M. THOMAS

TEST NO. 83-032

RUN NO. 8

S-005

B DOT I T/S



F106 LIGHTNING/TK 8/M. THOMAS

TEST NO. 83-032

RUN NO. 9

S-006

D DOT FWD  $A/m^2$

16:46:31.1962

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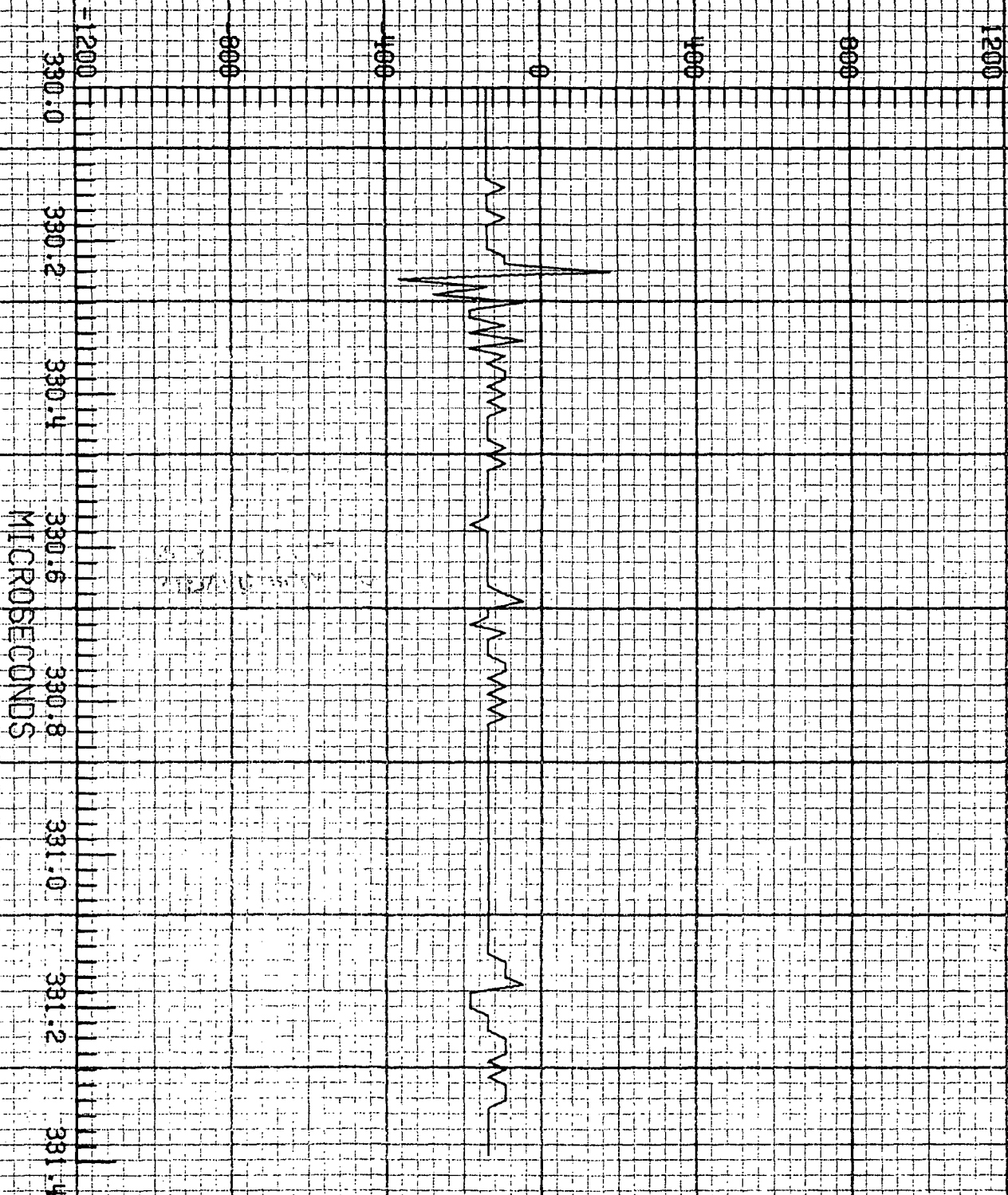
F106 LIGHTNING/TK 10/M. THOMAS

TEST NO. 83-032

RUN NO. 8

S=006

B DOT 1 T/S



F106 LIGHTNING/TK 8/M. THOMAS

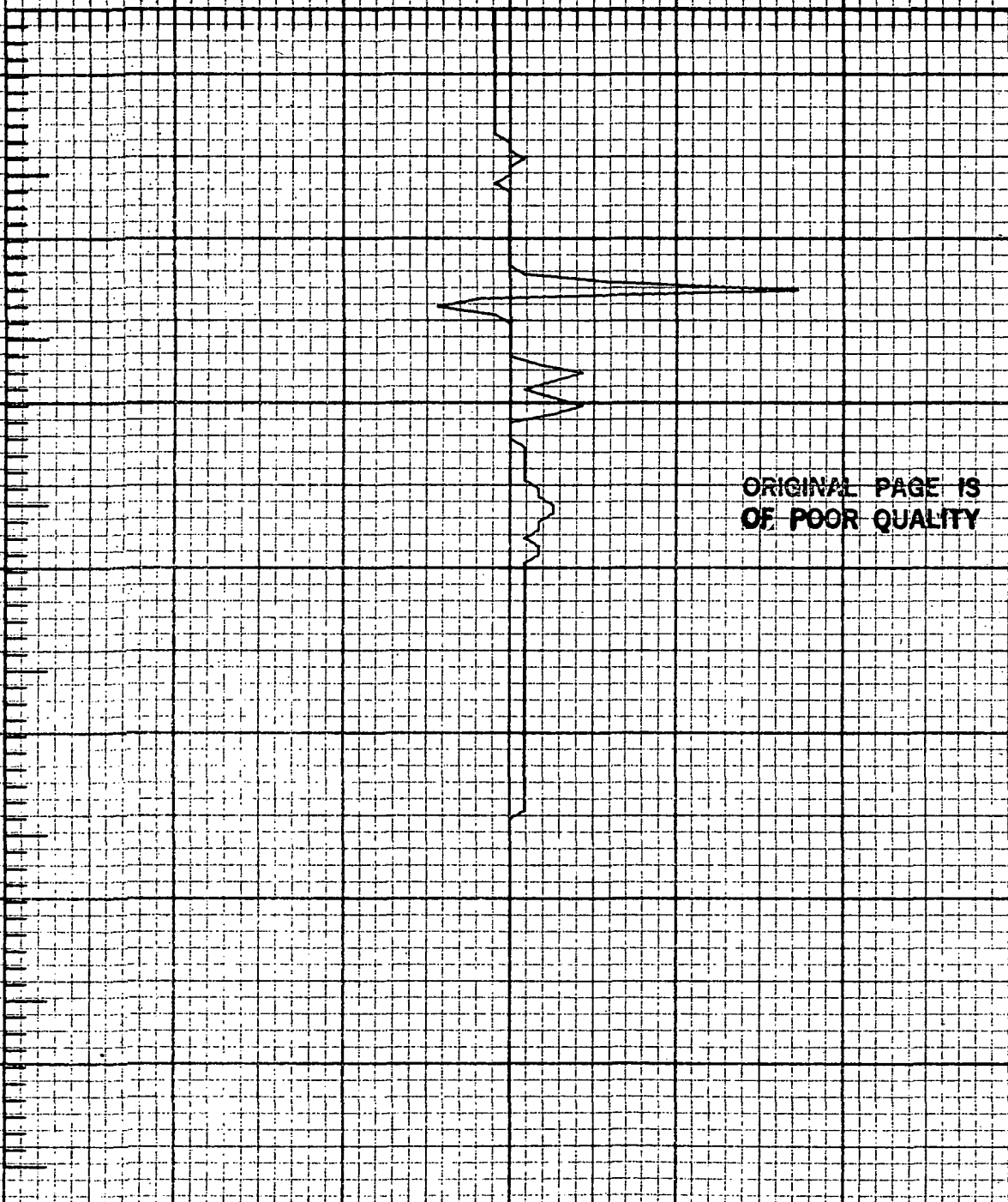
TEST NO. 83-032

RUN NO. 10

S-007

D DOT FWD A/m<sup>2</sup>

21 11 9 8 7 6 5 4 3 2 1



16:51:02.9729

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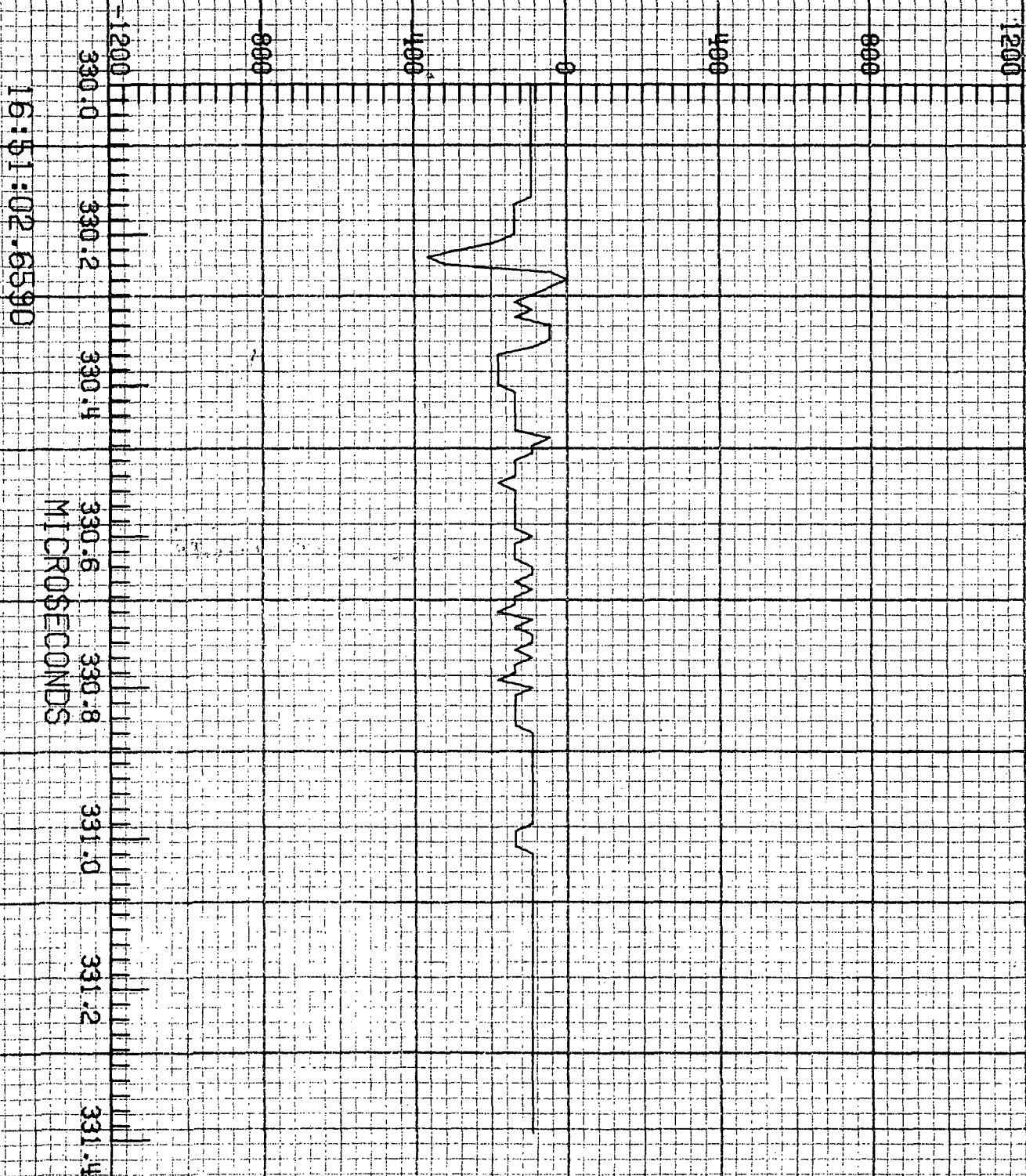
F106 LIGHTNING/TK 10/M.THOMAS

TEST NO. 83-032

RUN NO. 10

S-007

B DOT L T/S





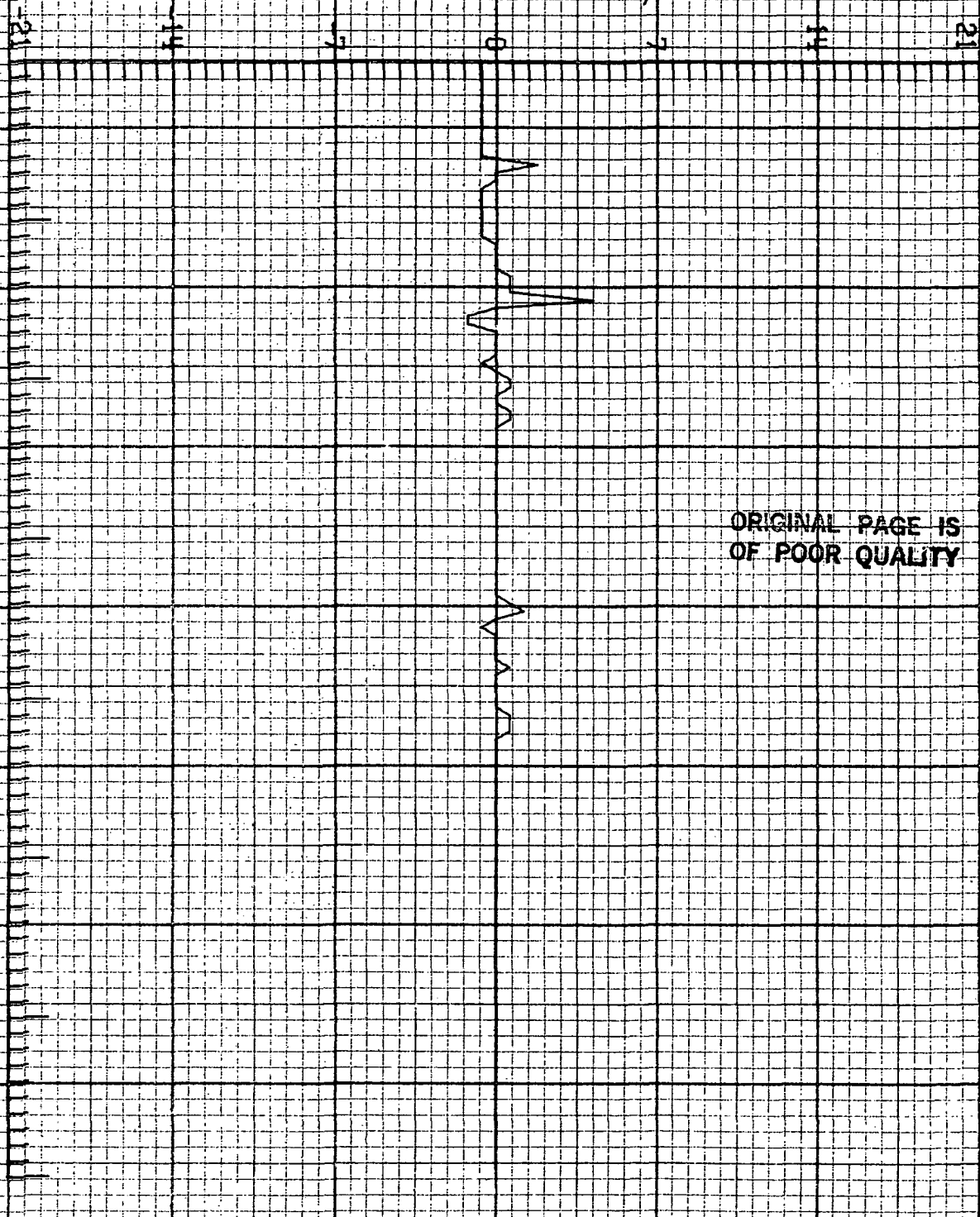
106 LIGHTNING/TK 8/M. THOMAS

TEST NO. 83-032

RUN NO. 10

S-007

D DOT FWD  $A/m^2$



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ORIGINAL PAGE IS  
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F106 LIGHTNING/TK 10/M.THOMAS

TEST NO. 83-032

RUN NO. 10

S-007

B DOT L T/S

-1200 -800 -400 0 400 800 1200

16:51:02.6580

1218.0

1218.2

1218.4

1218.6

1218.8

1219.0

1219.2

1219.4

MICROSECONDS

F106 LIGHTNING/TK 10/M. THOMAS

TEST NO. 83-032

RUN NO. 11

N-005

B DOT L T/S

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16:51:15.7040

330.0

330.2

330.4

330.6

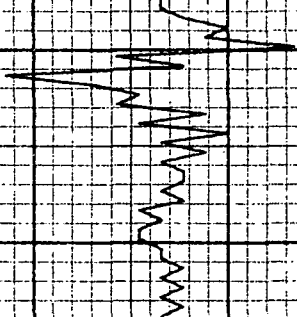
330.8

331.0

331.2

331.4

MICROSECONDS



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ORIGINAL PAGE IS  
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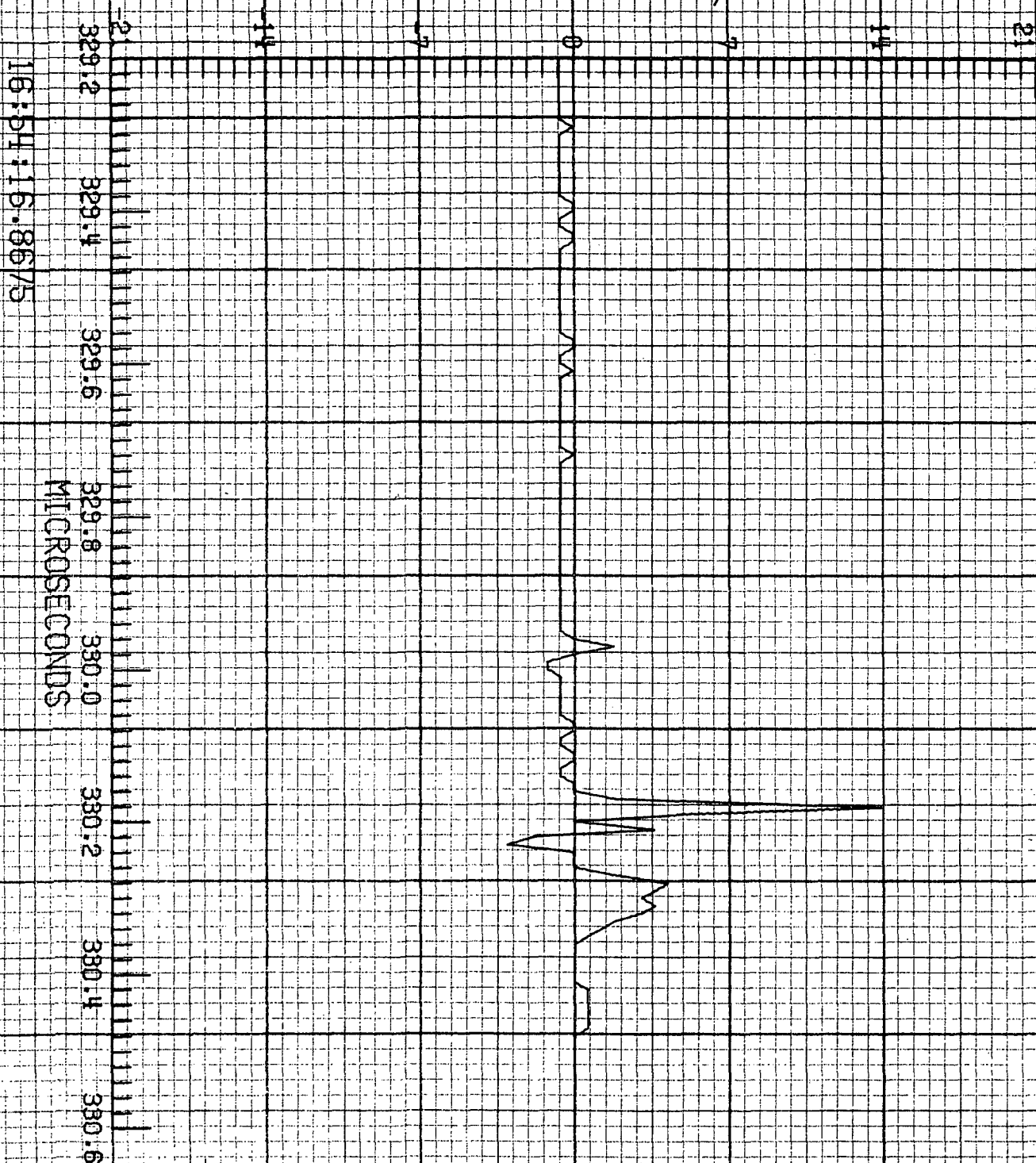
F106 LIGHTNING/TK 8/M. THOMAS

TEST NO. 83-032

RUN NO. 12

S-008

D DOT FWD  $A/m^2$



F106 LIGHTNING/TK 10/M.THOMAS

TEST NO. 83-032

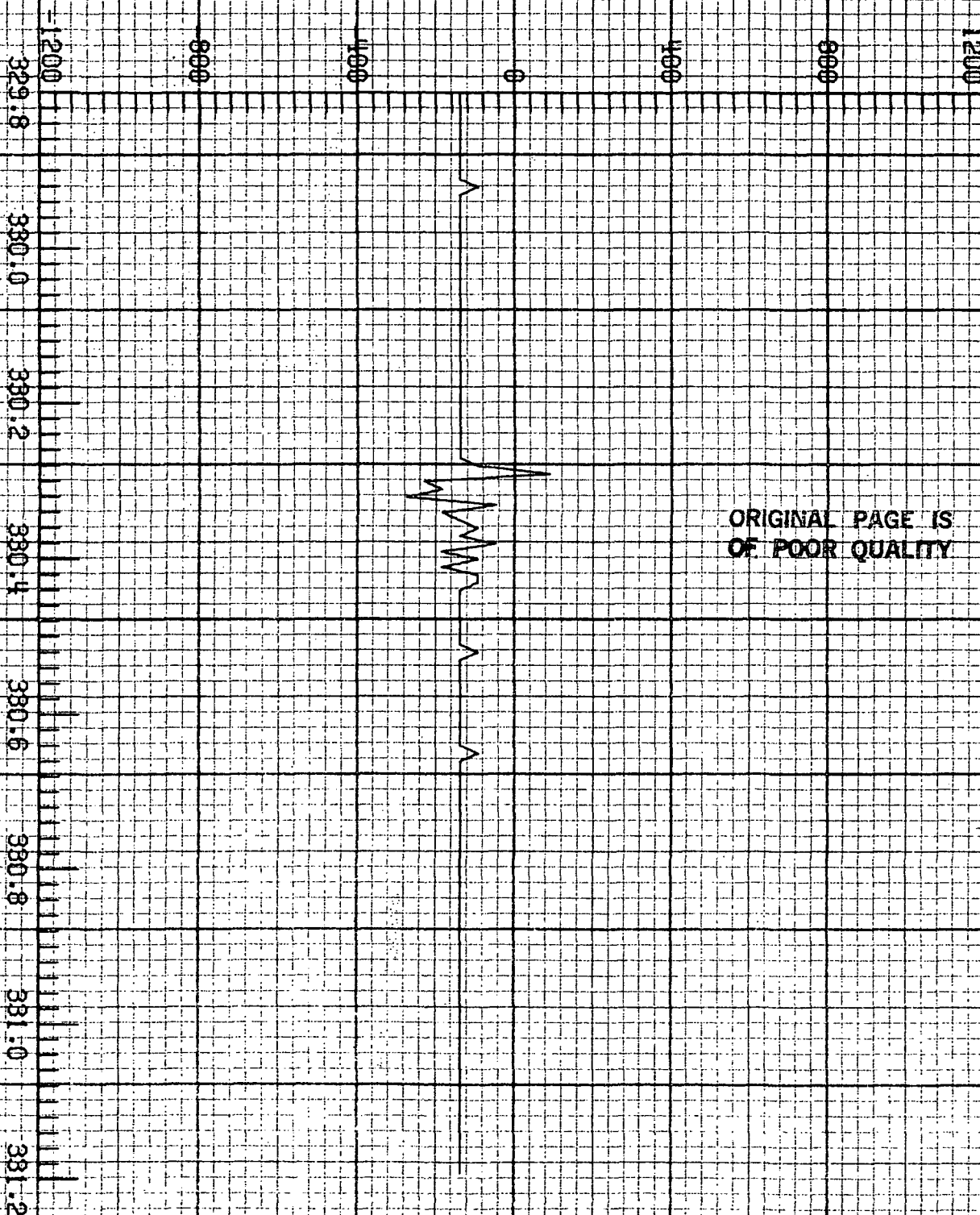
RUN NO. 12

N=007

B DOT 1 T/S

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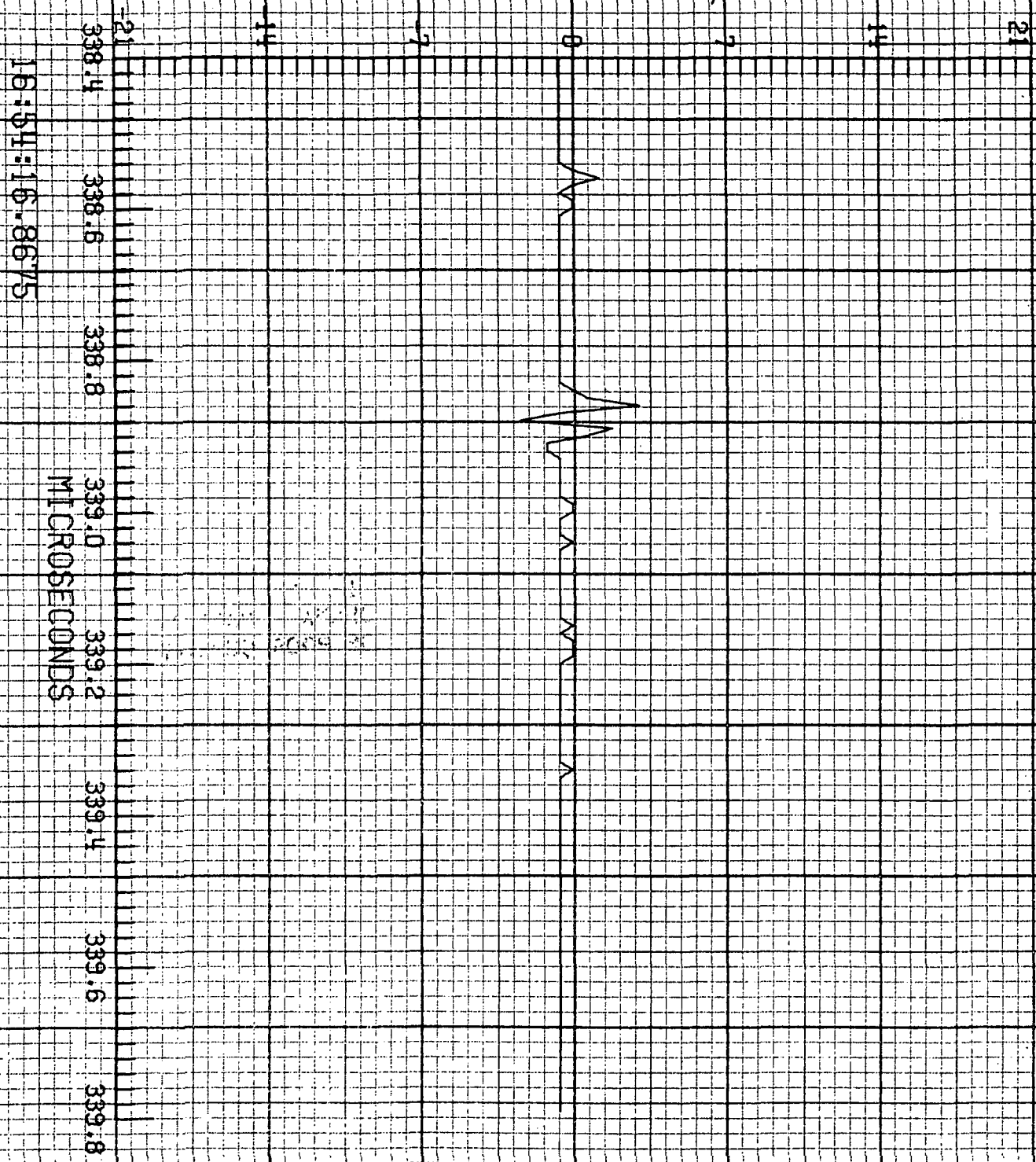
F106 LIGHTNING/TK 8/M. THOMAS

TEST NO. 83-032

RUN NO. 12

S-008

D DOT FWD  $A/m^2$



F106 LIGHTNING/TK 8/M. THOMAS  
RUN NO. 12

TEST NO. 83-032

S-008

D DOT FWD  $A/m^2$

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MICROSECONDS

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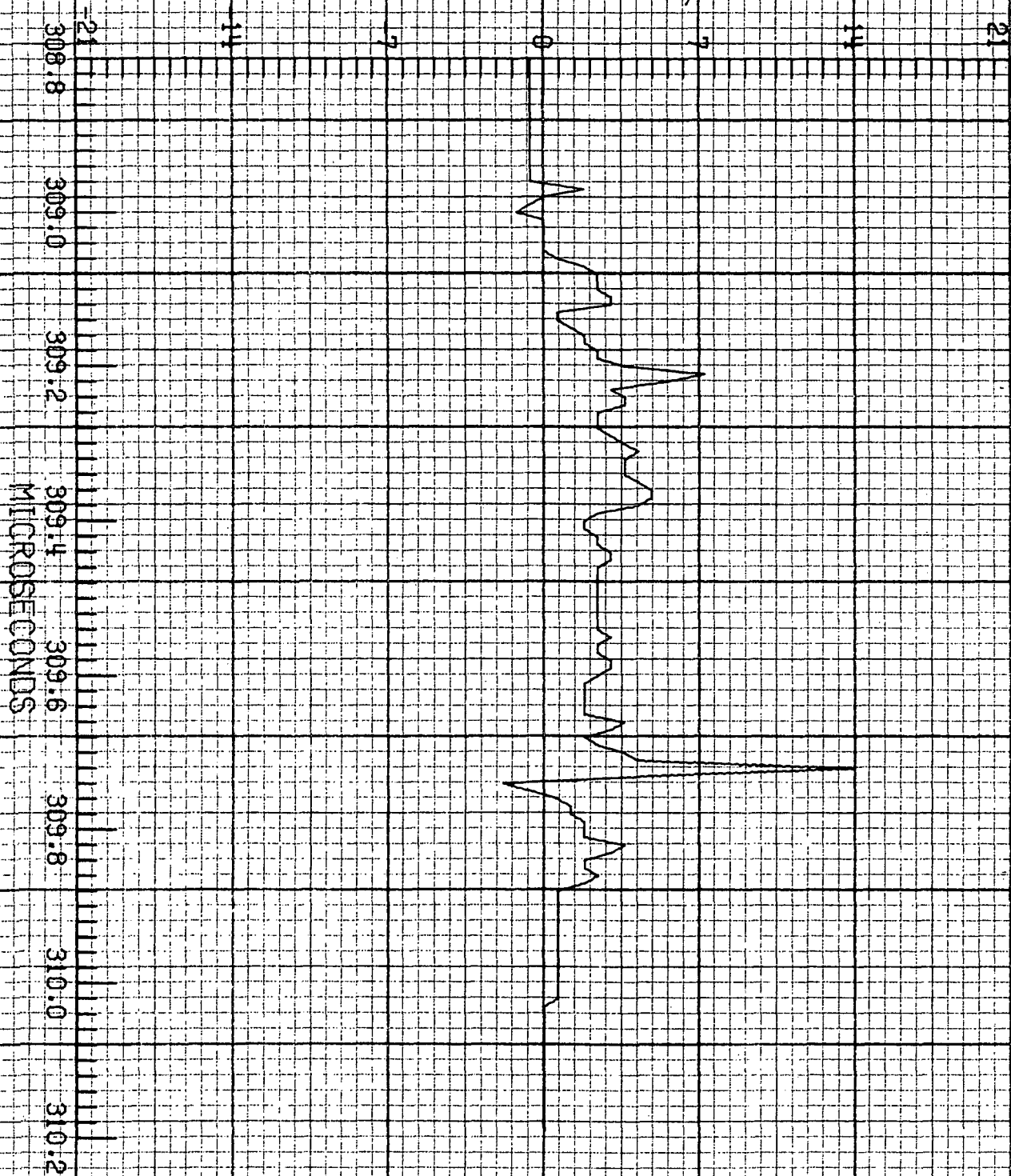
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TEST NO. 83-033

RUN NO. 1

S-001

D DOT FWD  $A/m^2$





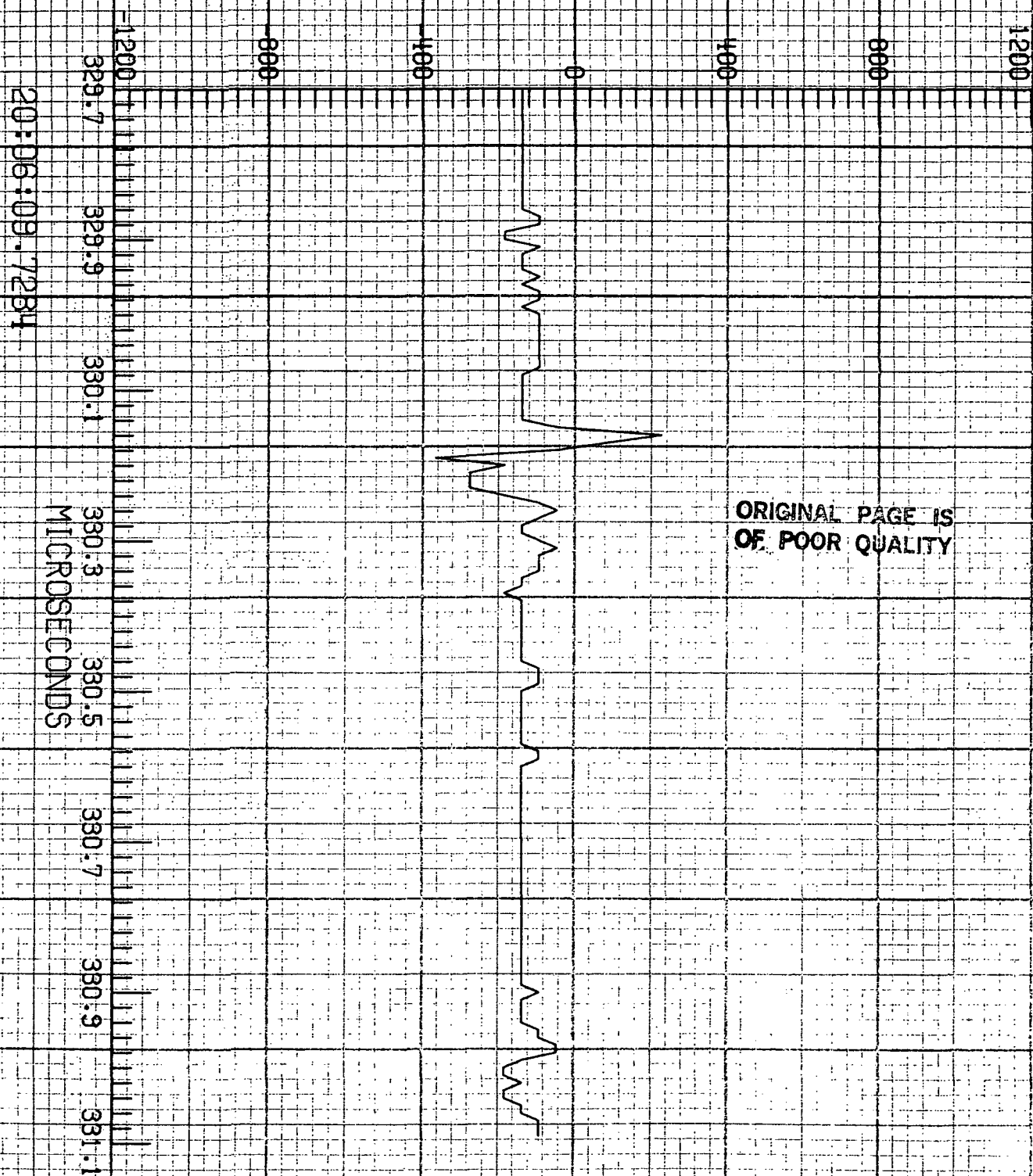
F106 LIGHTNING/TK 10/M.THOMAS

TEST NO. 83-033

RUN NO. 1

S-001

B DOT L T/S



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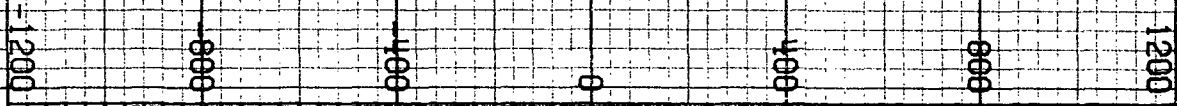
F106 LIGHTNING/TK 10/M. THOMAS

TEST NO. 83-033

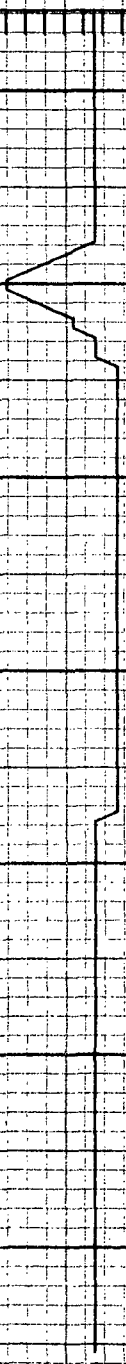
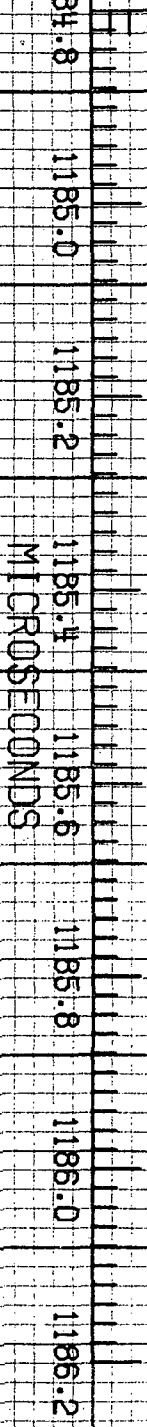
RUN NO. 1

S-001

B DOT L T/S



20:06:09.7284



4-20-85 11:00 AM  
1185.0000 1185.0000

F106 LIGHTNING/TK 10/M.THOMAS

TEST NO. 83-033

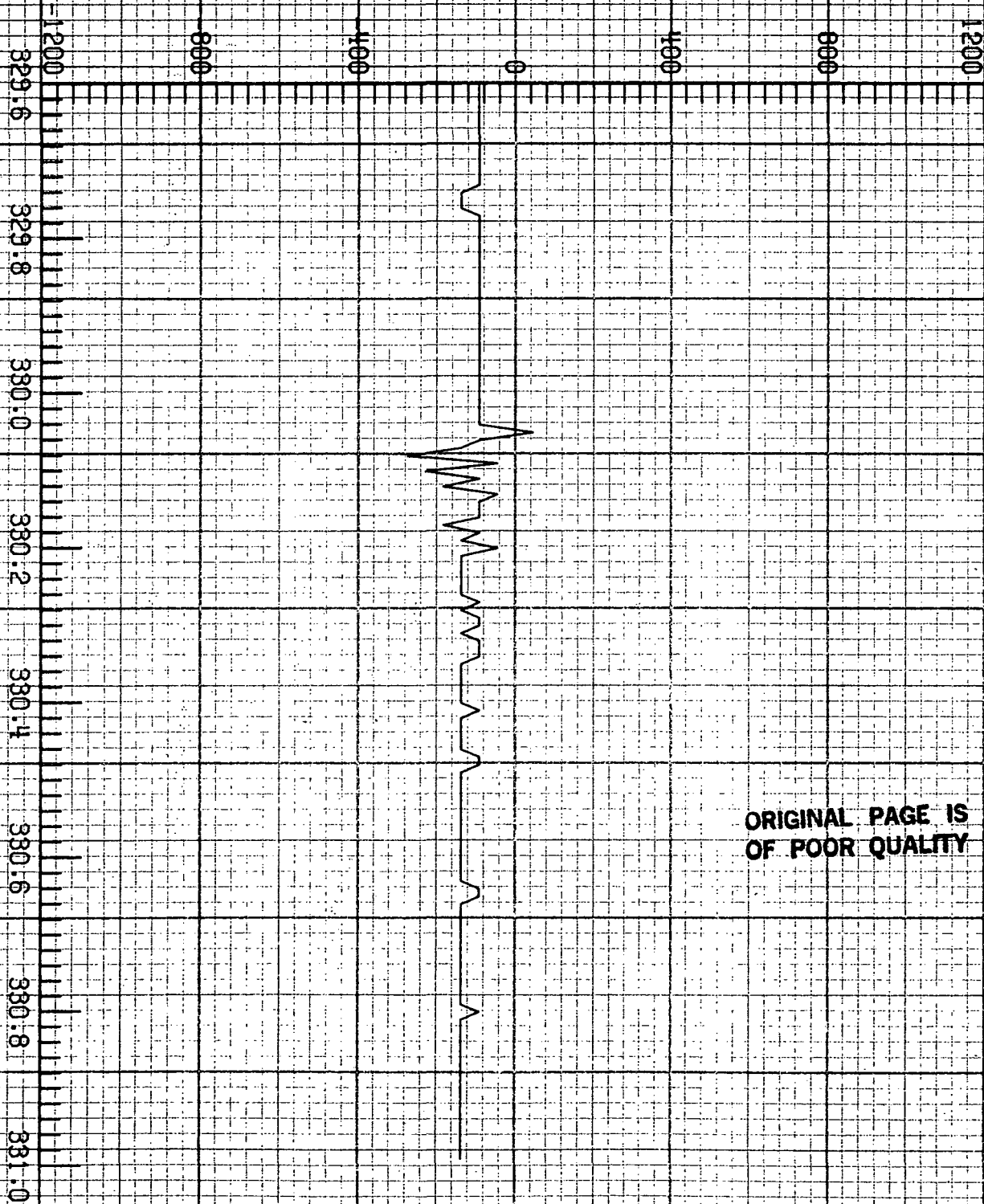
RUN NO. 2

N-001

B DOT L T/S

20:07:46.7850

MICROSECONDS



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F106 LIGHTNING/TK 10/M.THOMAS

TEST NO. 83-033

RUN NO. 3

N=002

B DOT 1 T/S

-1200 -800 -400 0 400 800 1200

329.7

329.9

330.1

330.3

330.5

330.7

330.9

331.1

20:14:52.0520

MICROSECONDS

F106 LIGHTNING/TK 10/M.THOMAS

TEST NO. 83-033

RUN NO. 4

S-002

B DOT I T/S

1200 800 400 0 -400 -800 -1200

20:15:19.2320

329.7

329.9

330.1

330.3

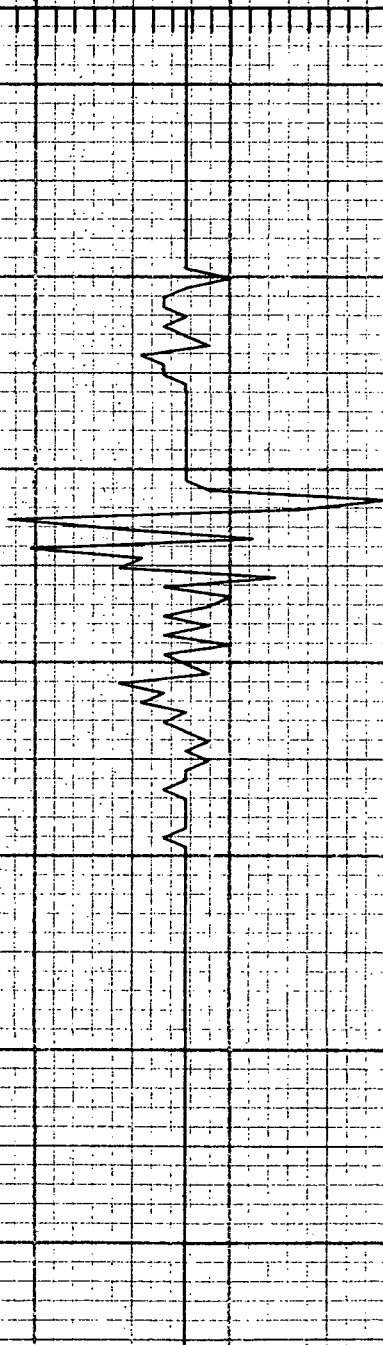
330.5

330.7

330.9

331.1

MICROSECONDS



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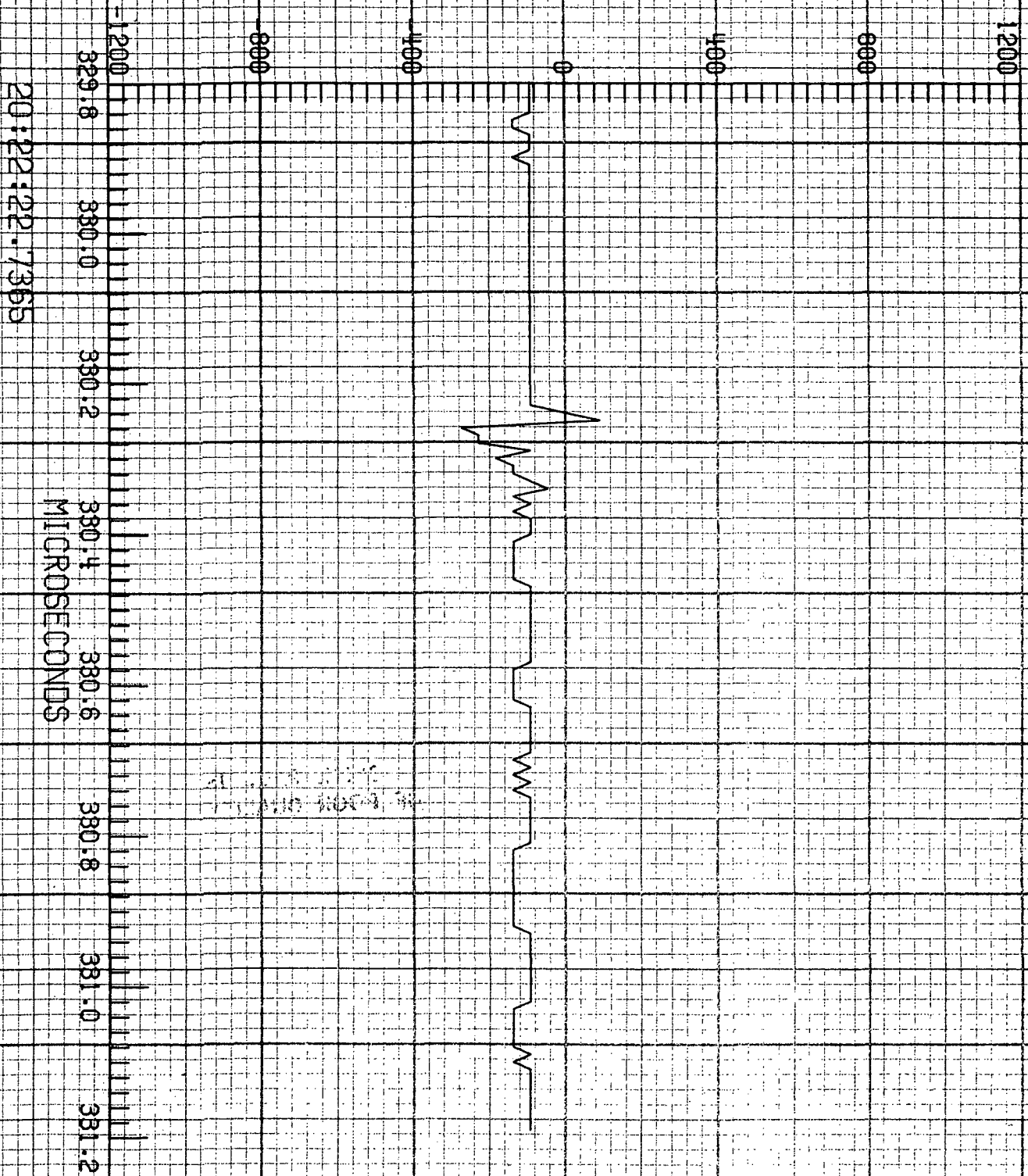
F106 LIGHTNING/TK 10/M. THOMAS

TEST NO. 83-033

RUN NO. 5

N=003

B DOT 1 T/S



F106 LIGHTNING/TK 8/M. THOMAS

TEST NO. 83-033

RUN NO. 5

S-003

D DOT FWD A/m<sup>2</sup>

-21 11 1 0 1 11 21

329.6

329.8

330.0

330.2

330.4

330.6

330.8

331.0

20:23:01.4005

MICROSECONDS

1

1

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F106 LIGHTNING/TK 10/M.THOMAS

TEST NO. 83-033

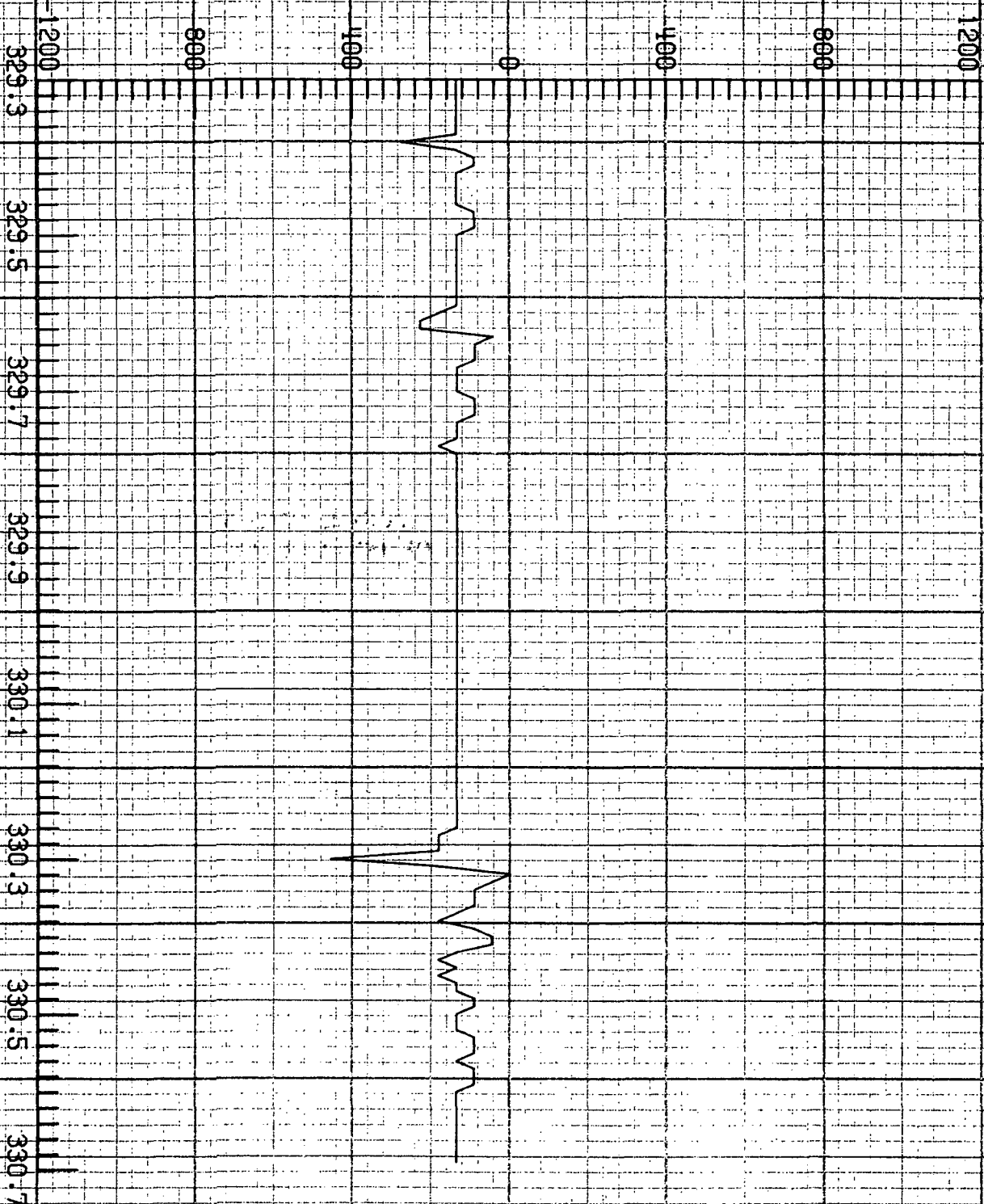
RUN NO. 6

S-003

B DOT L T/S

20:23:04.4009

MICROSECONDS





F106 LIGHTNING/TK 8/M. THOMAS

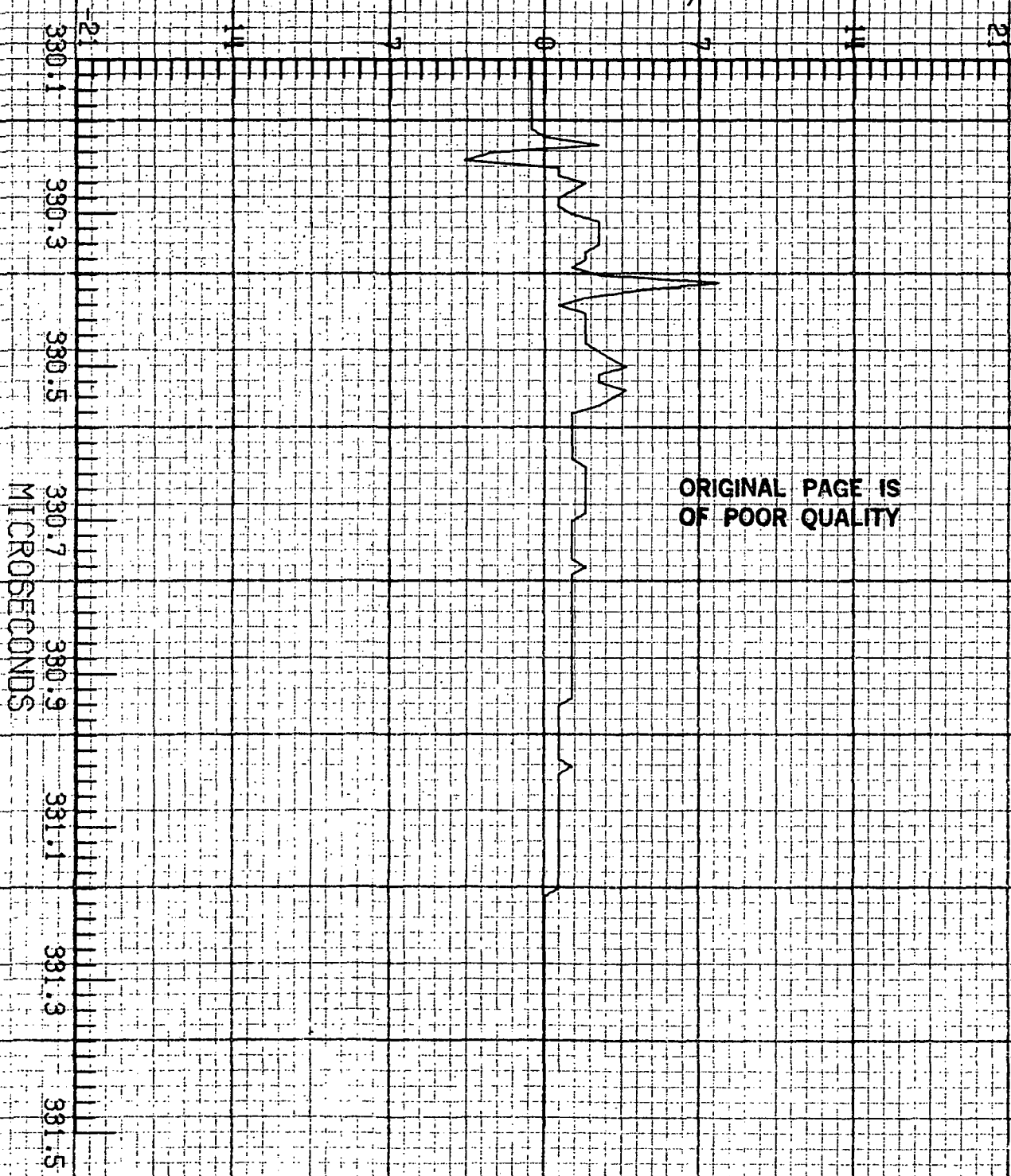
TEST NO. 83-033

RUN NO. 7

S-004

D DOT FWD  $A/m^2$

20:23:25.7524



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F106 LIGHTNING/TK 10/M. THOMAS

TEST NO. 83-033

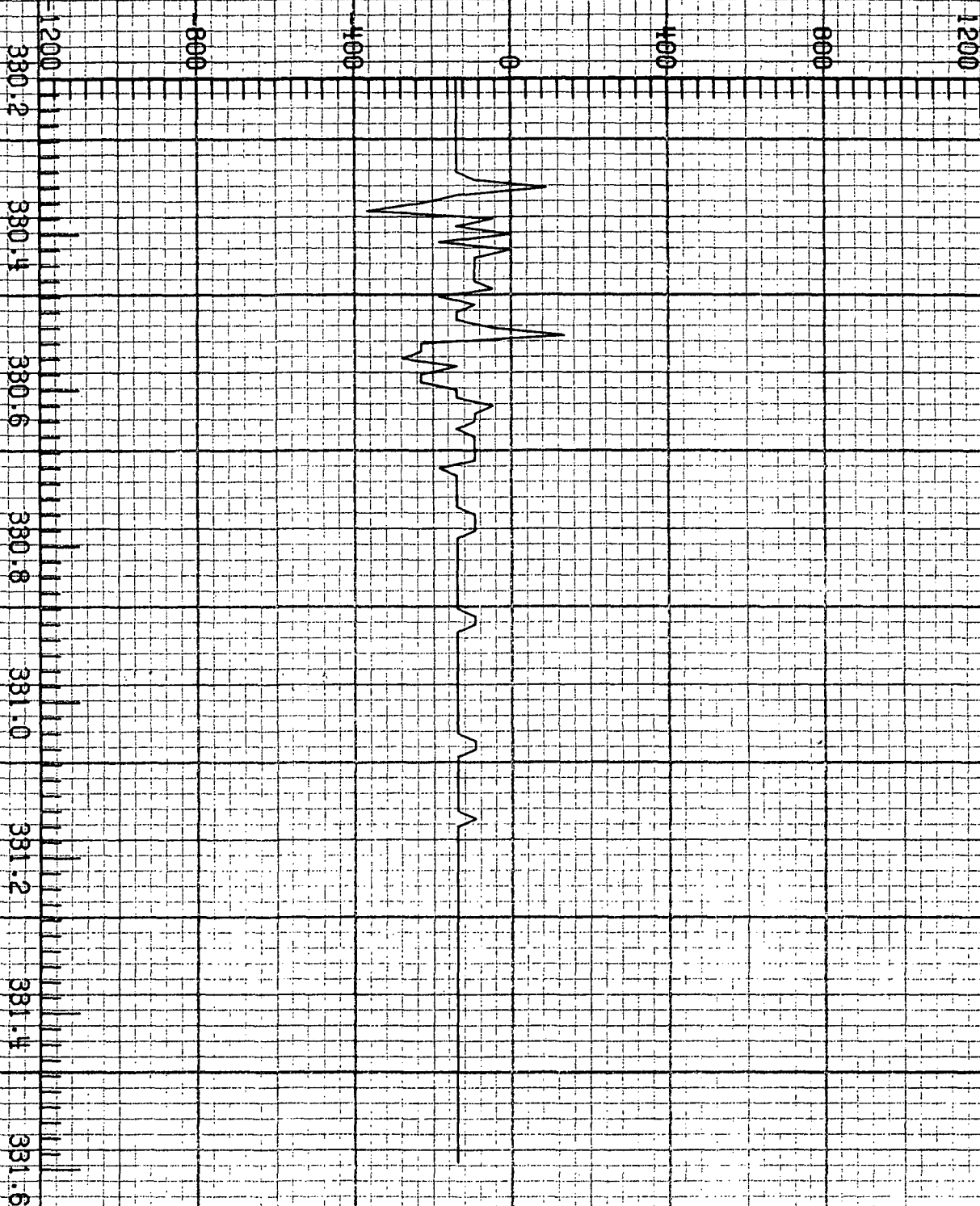
RUN NO. 7

S-004

B DOT I T/S

20:23:25.7519

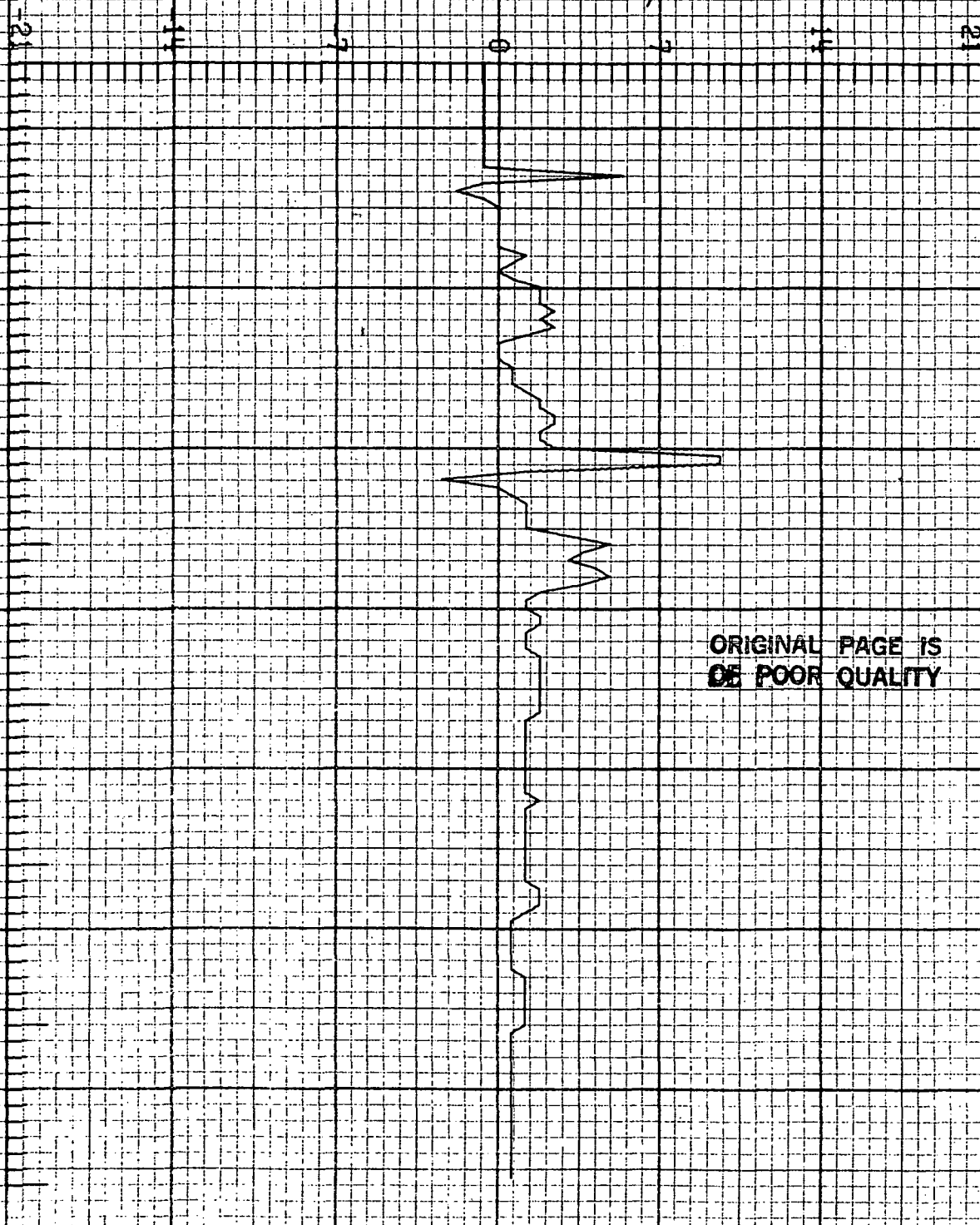
MICROSECONDS



F106 LIGHTNING/TK 8/M. THOMAS  
RUN NO. 8 S-005

TEST NO. 83-033

D DOT FWD  $A/m^2$





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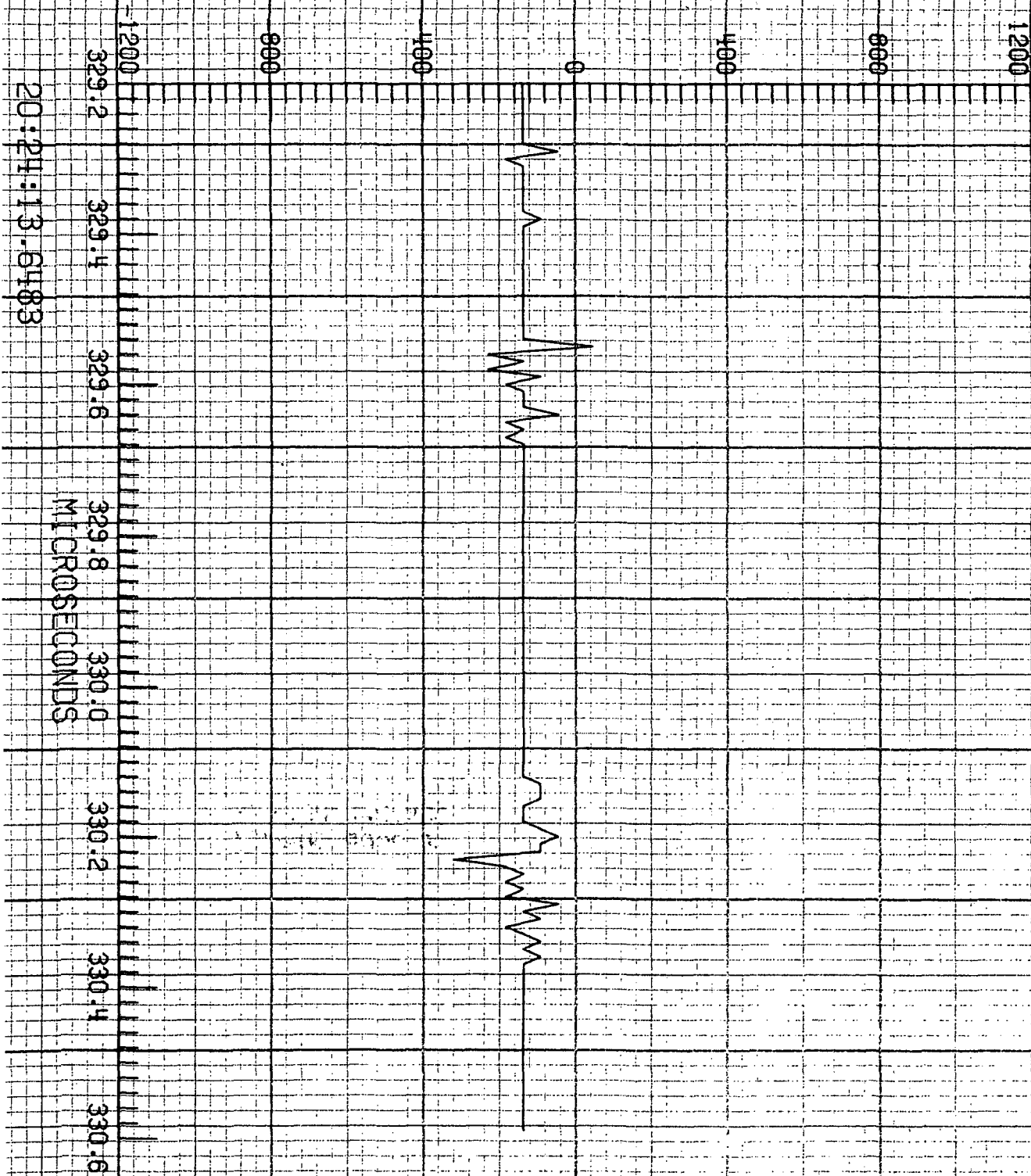
F106 LIGHTNING/TK 10/M. THOMAS

TEST NO. 83-033

RUN NO. 8

S-005

B DOT 1 T/S



F106 LIGHTNING/TK 10/M.THOMAS

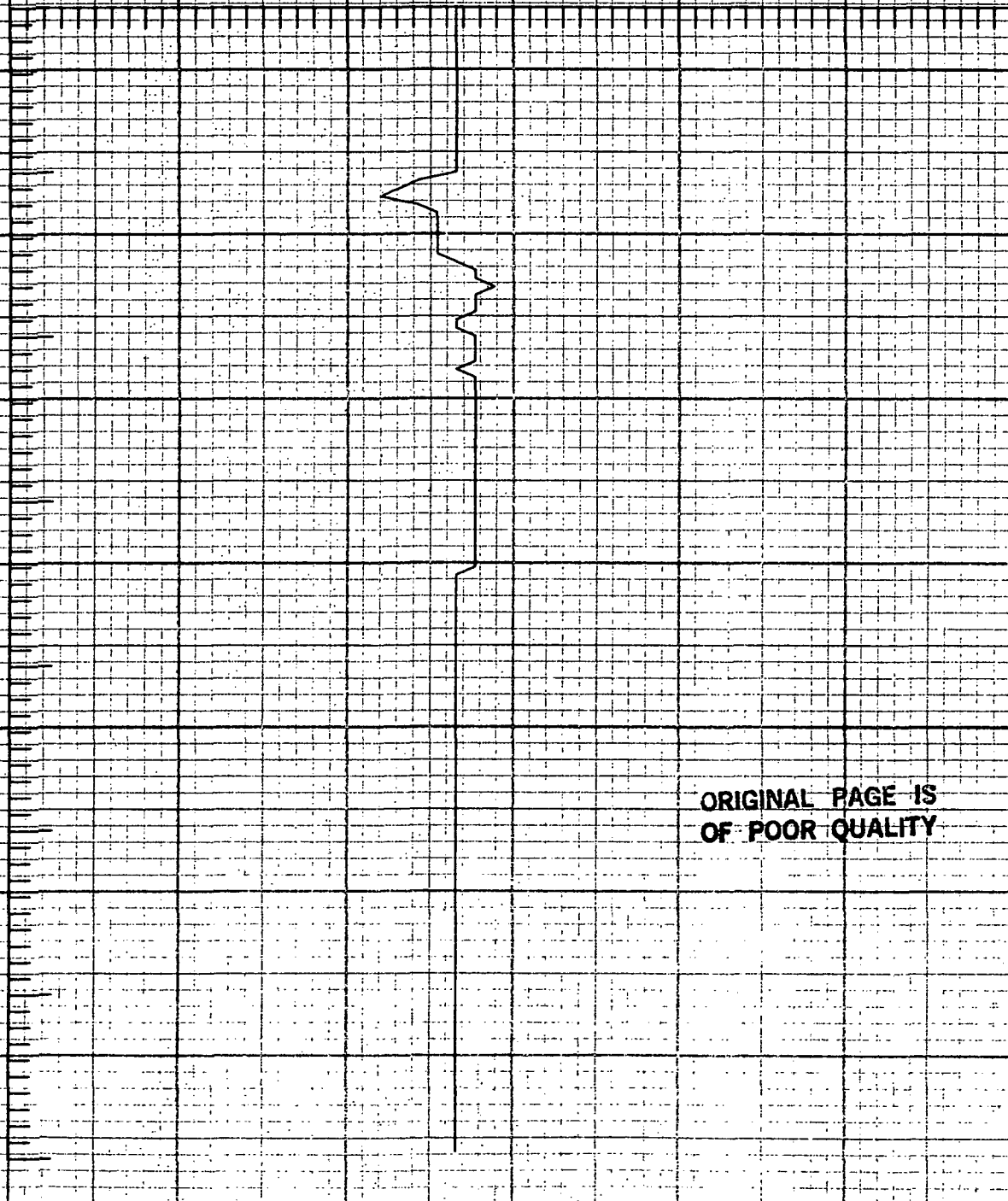
TEST NO. 83-033

RUN NO. 9

S-006

B DOT L T/S

-1200 800 400 0 400 800 1200



20:24:25.3812

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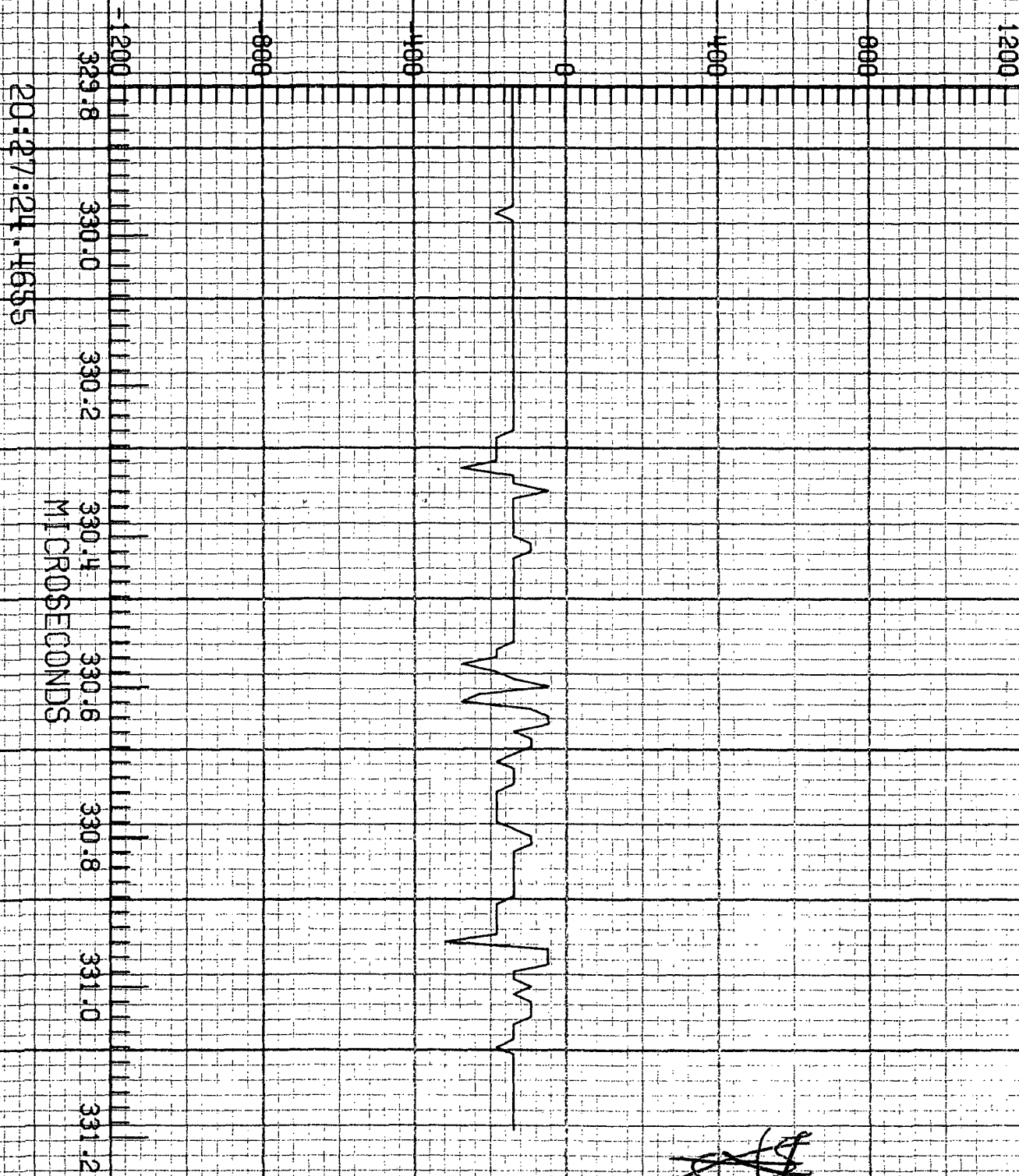
F106 LIGHTNING/TK 10/M.THOMAS

TEST NO. 83-033

RUN NO. 10

N=004

B DOT L T/S



F106 LIGHTNING/TK 10/M.THOMAS

TEST NO. 83-033

RUN NO. 10

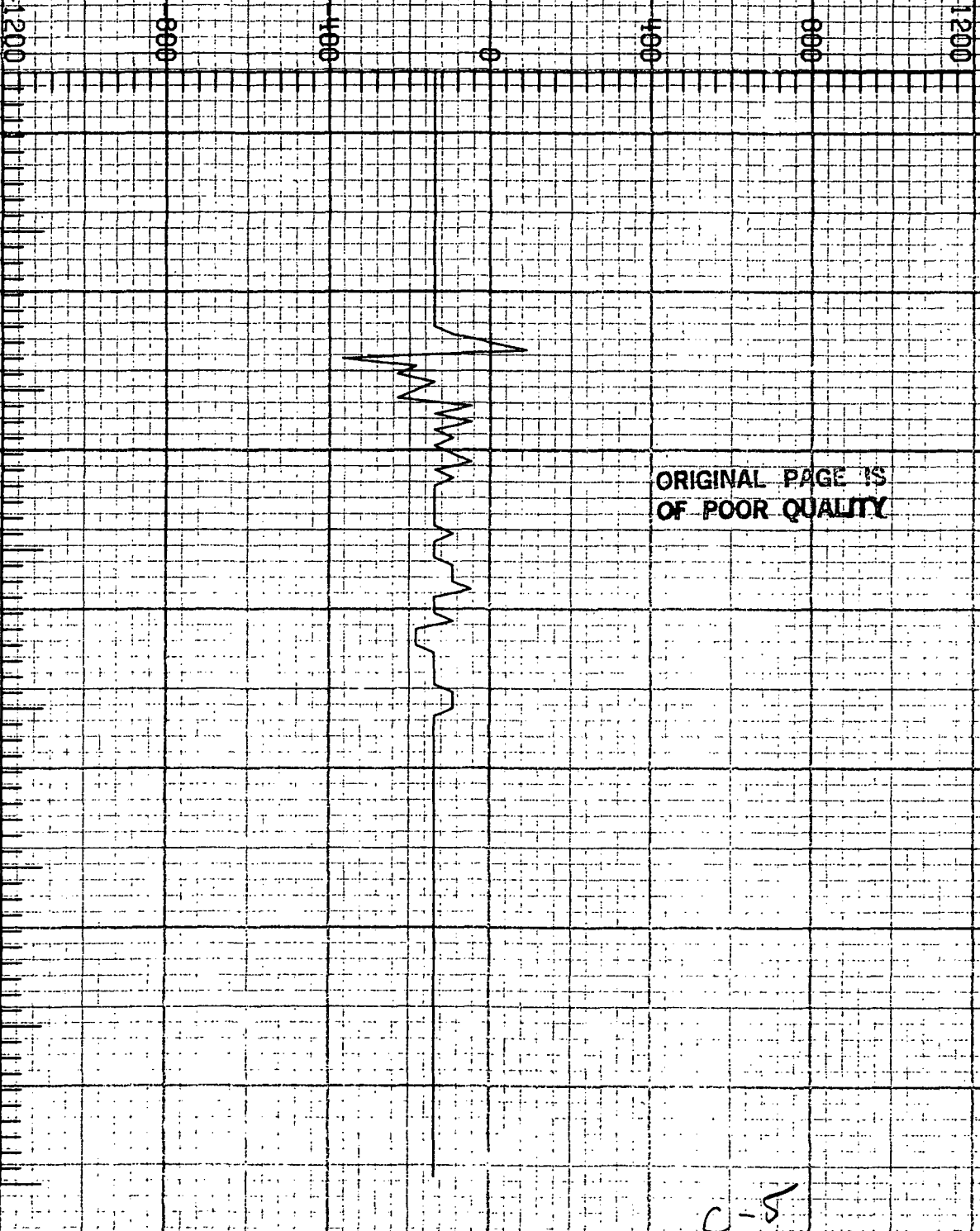
N-004

B DOT L T/S

20:27:21.4655

MICROSECONDS

1024.4 1024.6 1024.8 1025.0 1025.2 1025.4 1025.6 1025.8



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C-5

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F106 LIGHTNING/TK 8/M. THOMAS

TEST NO. 83-033

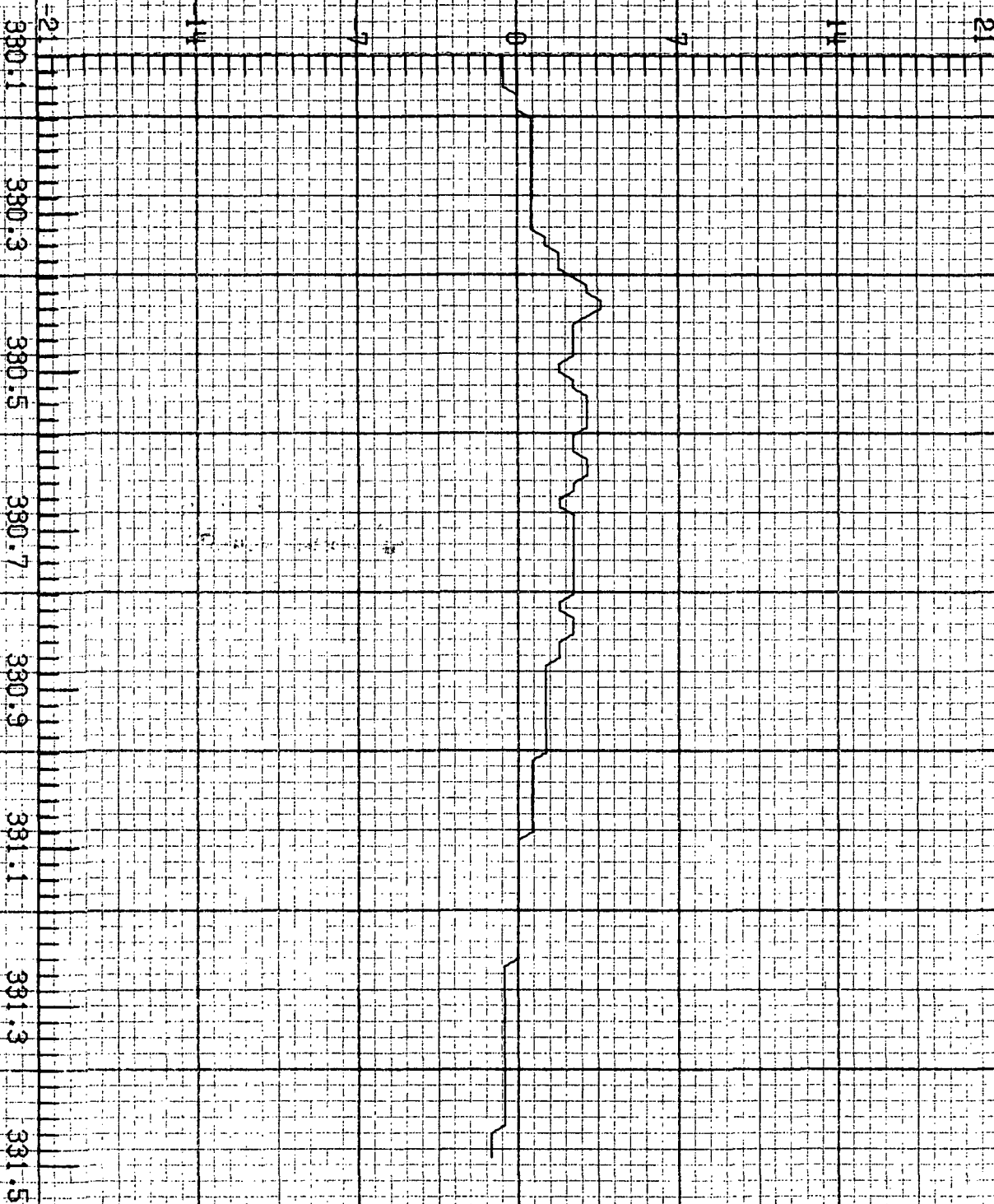
RUN NO. 11

S-007

D DOT FWD  $A/m^2$

20:28:47.4192

MICROSECONDS





F106 LIGHTNING/TK 10/M.THOMAS

TEST NO. 83-033

RUN NO. 11

S-007

B DOT L T/S

1200  
800  
400  
0  
-400  
-800  
-1200

329.6

329.8

330.0

330.2

330.4

330.6

330.8

331.0

20:28:47.4204

MICROSECONDS

ORIGINAL PAGE IS  
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F106 LIGHTNING/TK 8/M. THOMAS  
RUN NO. 12

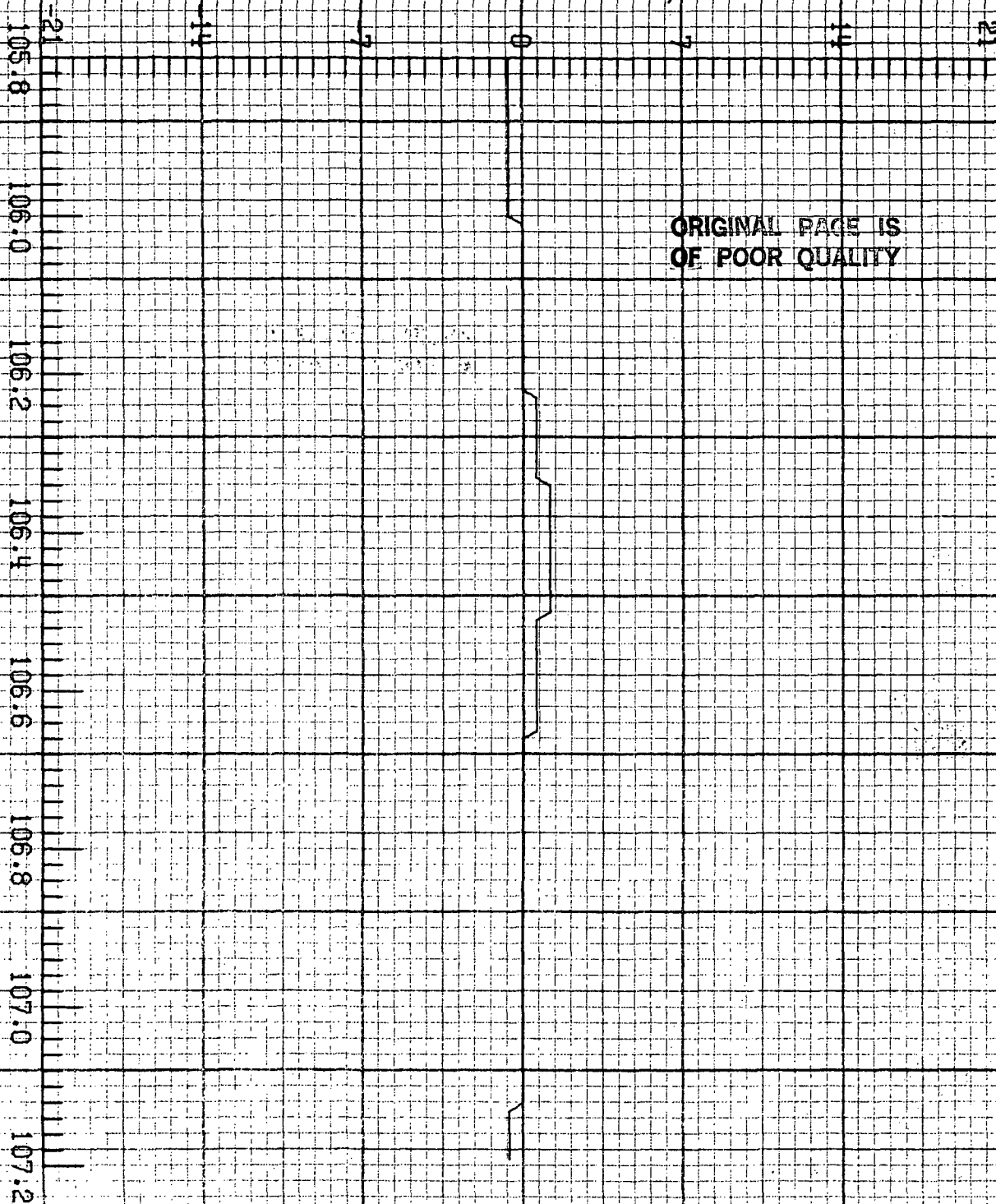
S-008

TEST NO. 83-033

D DOT FWD  $A/m^2$

20:38:43.9363

MICROSECONDS



ORIGINAL PAGE IS  
OF POOR QUALITY

F106 LIGHTNING/TK 8/M. THOMAS  
RUN NO. 12

S-008

TEST NO. 83-033

DOT FWD

$A/m^2$

20:38:43.9363

MICROSECONDS

329.6  
329.8  
330.0  
330.2  
330.4  
330.6  
330.8  
331.0

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F106 LIGHTNING/TK 10/M.THOMAS

TEST NO. 83-033

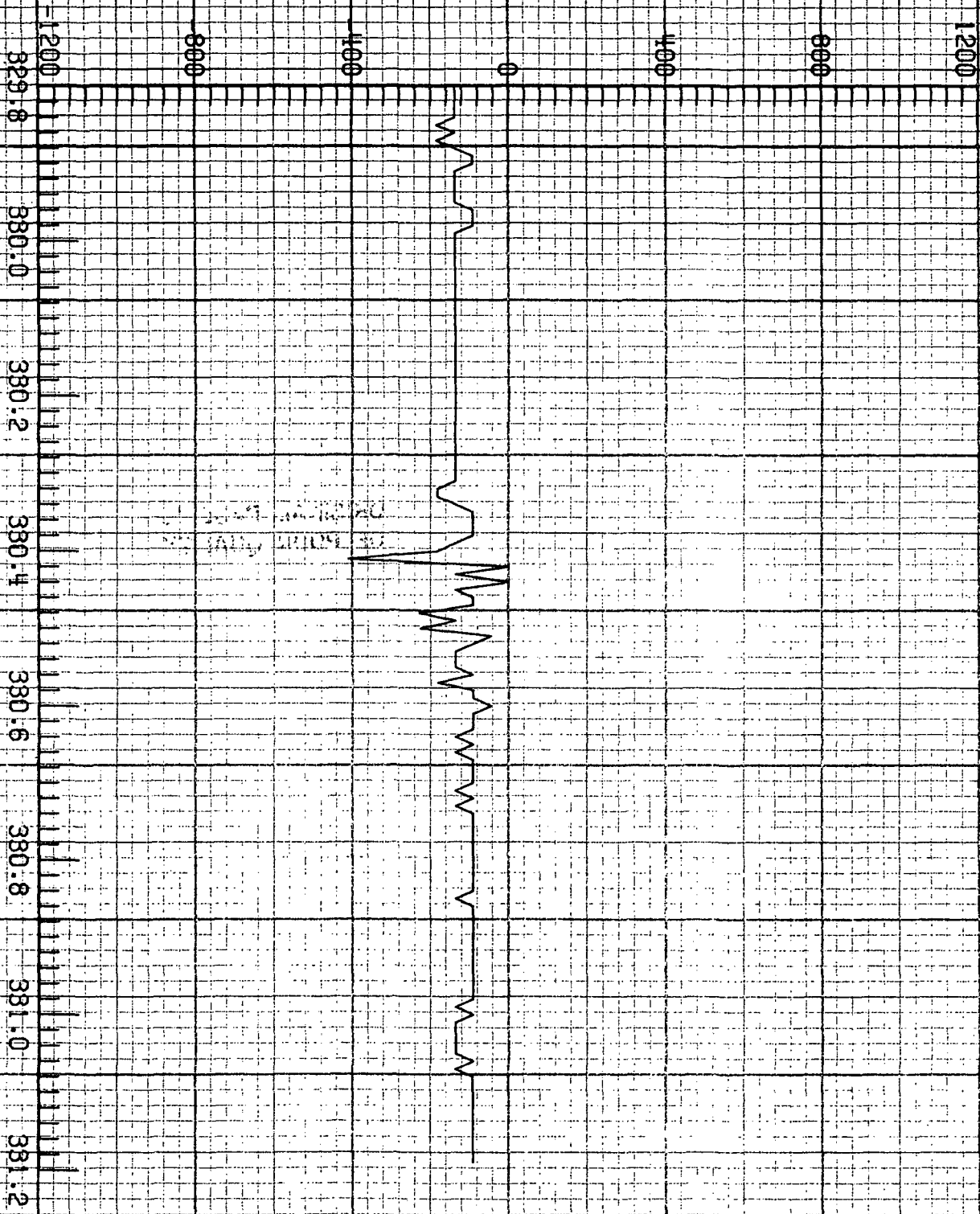
RUN NO. 12

S-008

B DOT 11 T/S

20:38:43.9357

MICROSECONDS



F106 LIGHTNING/TK 8/M. THOMAS  
RUN NO. 12 S-008

TEST NO. 83-033

D DOT FWD  $A/m^2$

20:38:43.9363

MICROSECONDS

785.4 785.6 785.8 786.0 786.2 786.4 786.6 786.8

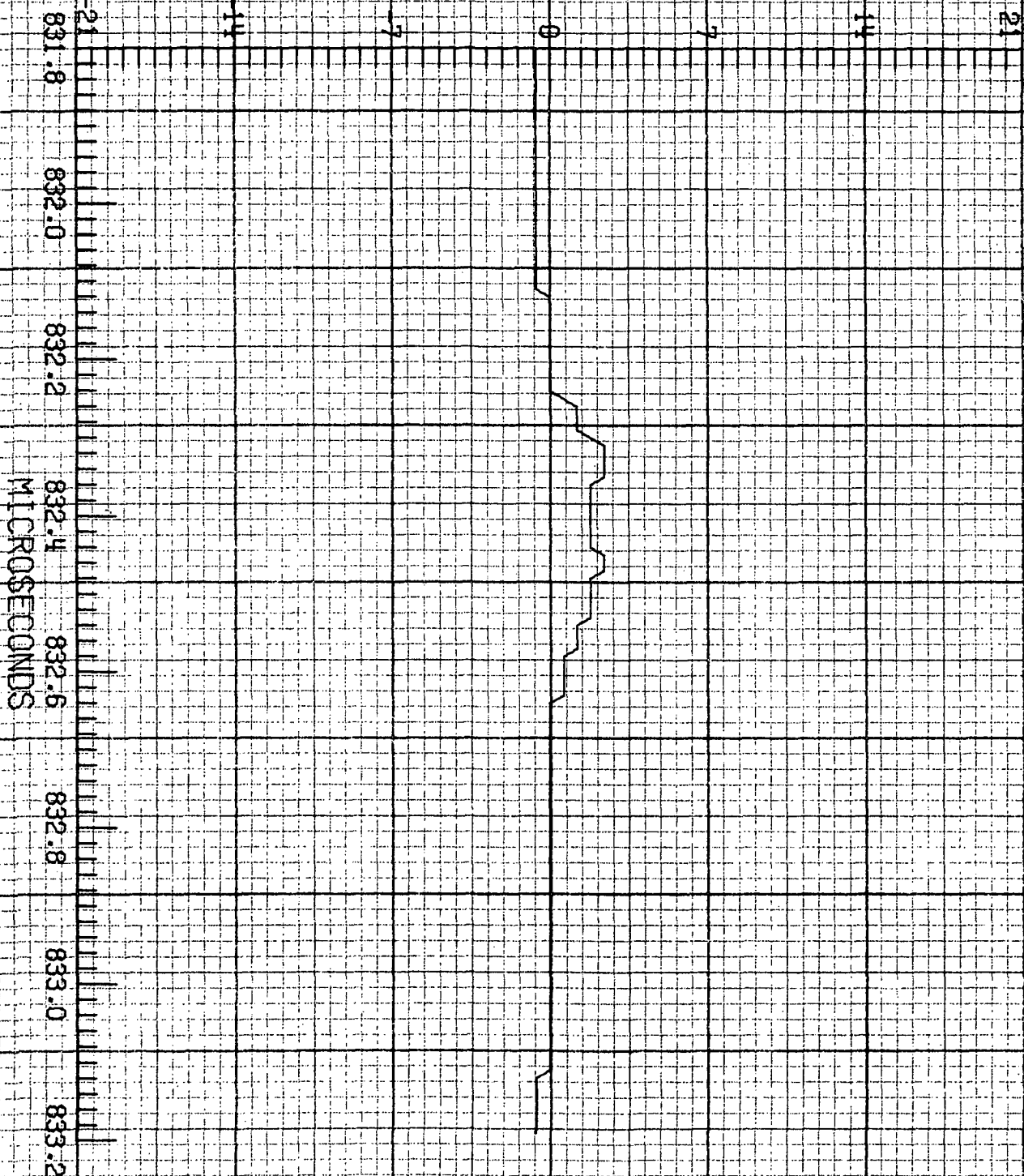
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F106 LIGHTNING/TK 8/M. THOMAS  
RUN NO. 12 S-008

TEST NO. 83-033

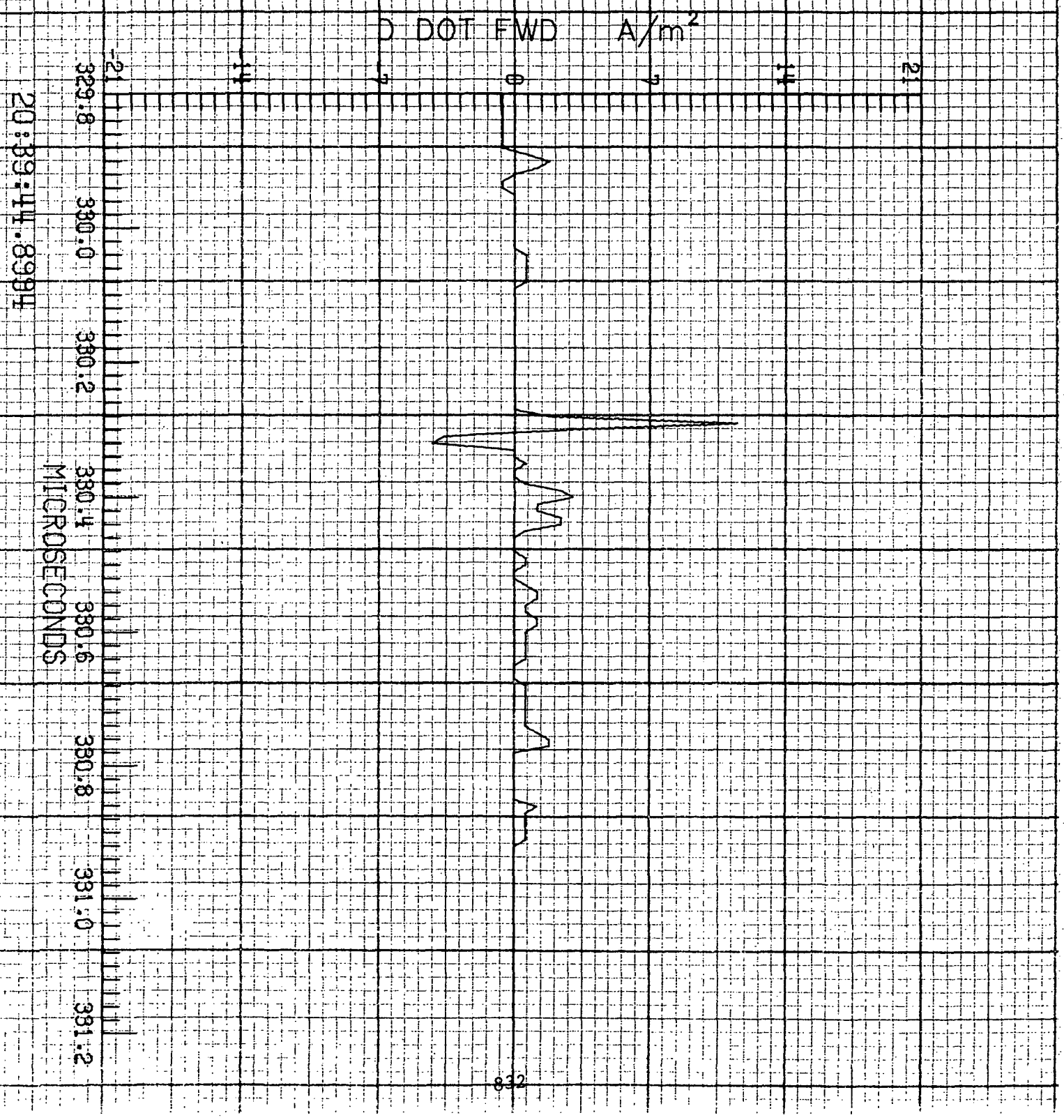
D DOT FWD  $A/m^2$



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F106 LIGHTNING/TK 8/M. THOMAS  
RUN NO. 13 S-011

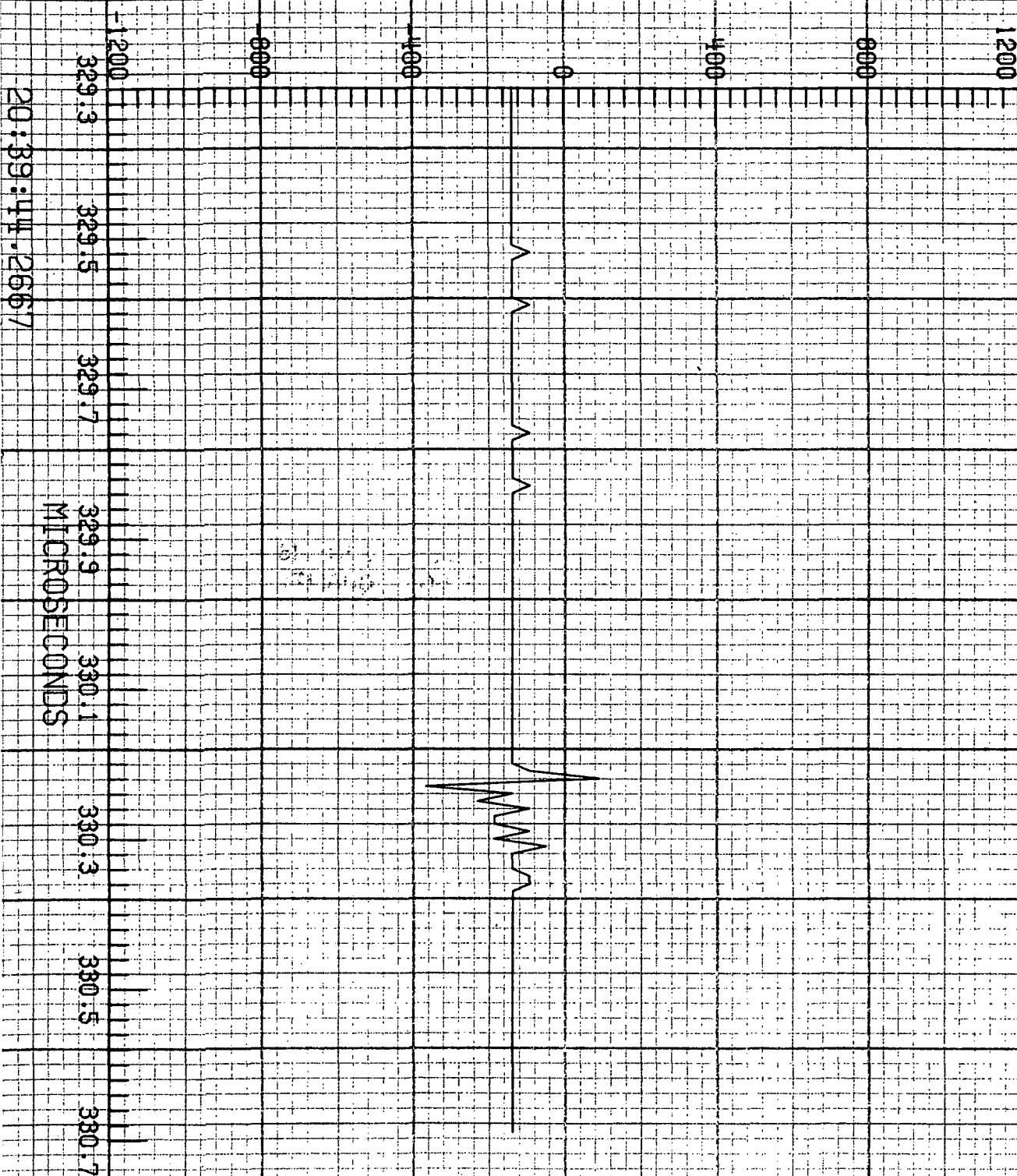
TEST NO. 83-033



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TEST NO. 83-033

F106 LIGHTNING/TK 10/M. THOMAS  
RUN NO. 13 N-005

B DOT I T/S





F106 LIGHTNING/TK 8/M. THOMAS  
RUN NO. 13

S-011

TEST NO. 83-033

D DOT FWD  $A/m^2$

20:39:44.899H

MICROSECONDS

391.0 391.2 391.4 391.6 391.8 392.0 392.2 392.4

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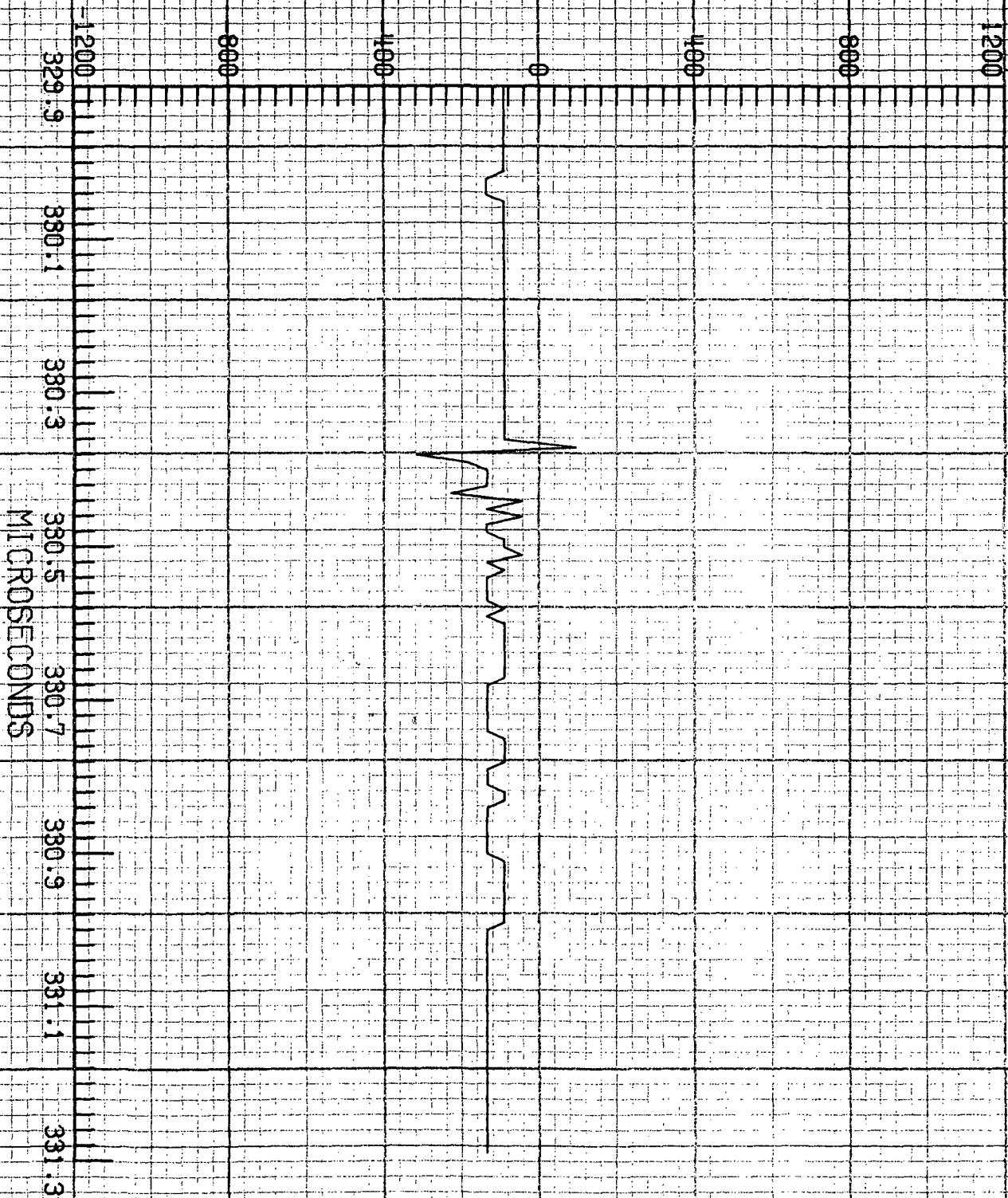
F106 LIGHTNING/TK 10/M.THOMAS

TEST NO. 83-033

RUN NO. 14

N=006

B DOT L T/S

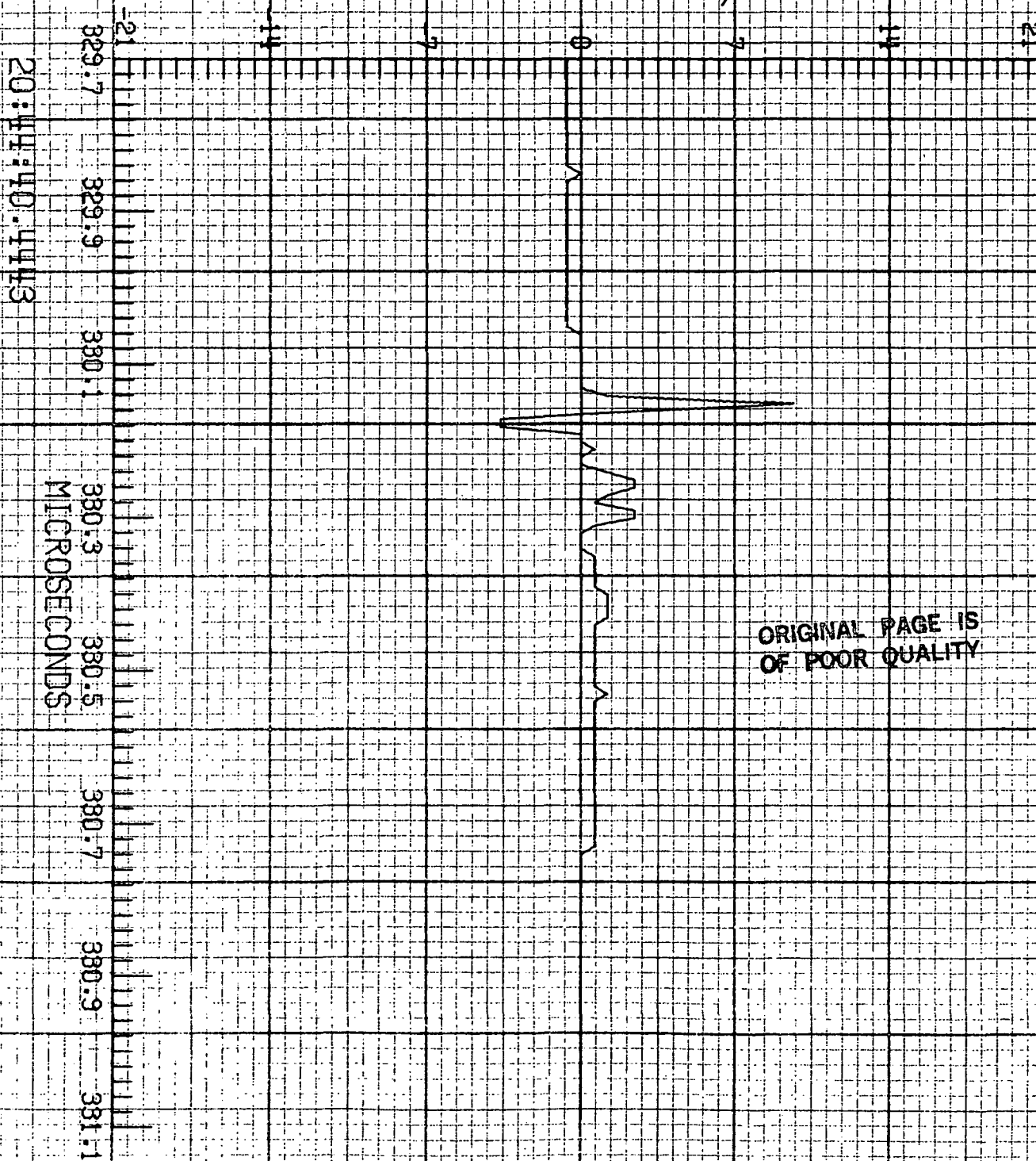


F106 LIGHTNING/TK 8/M. THOMAS  
RUN NO. 15

N-007

TEST NO. 83-033

D DOT FWD  $A/m^2$



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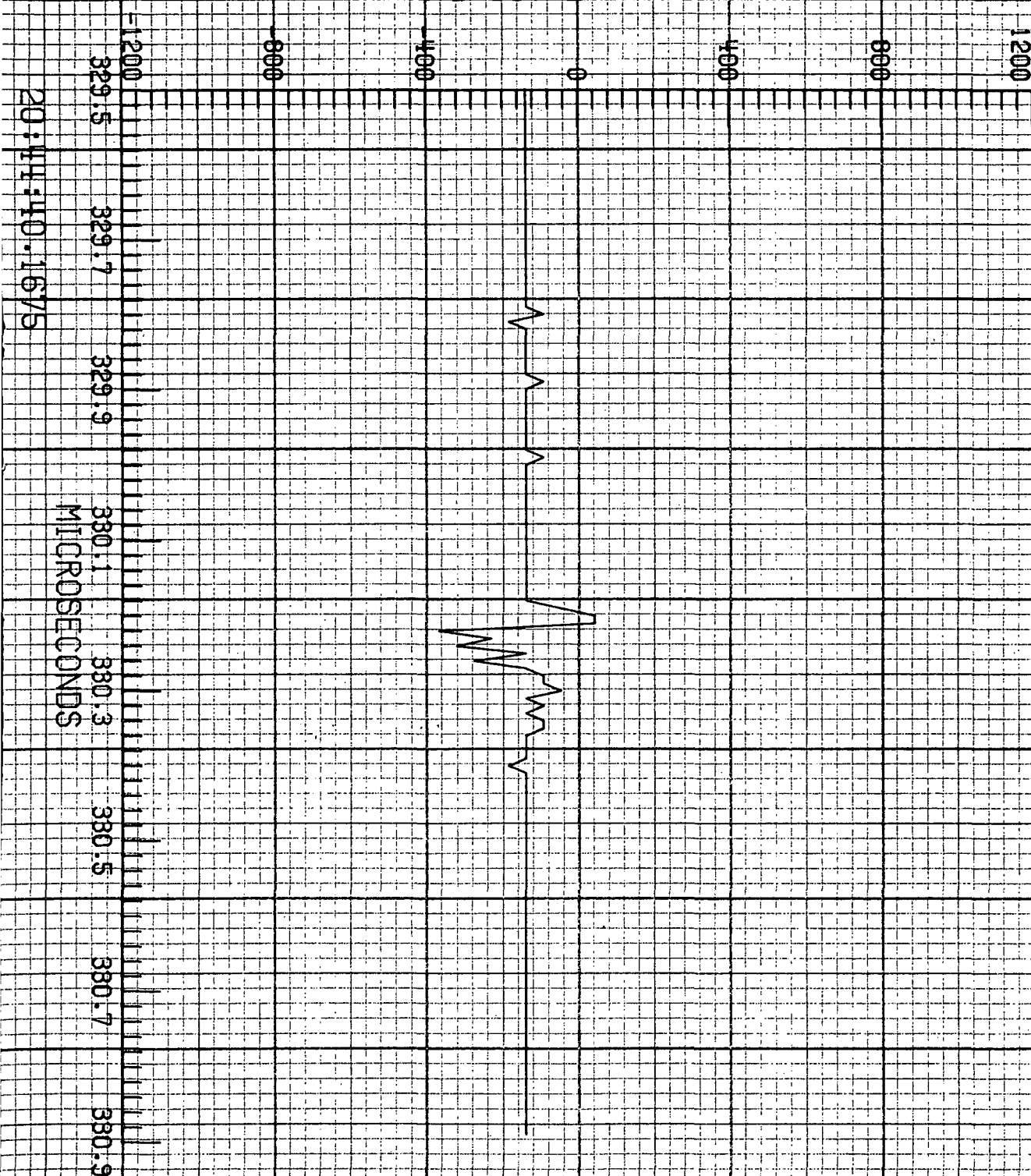
F106 LIGHTNING/TK 10/M. THOMAS

TEST NO. 83-033

RUN NO. 15

N-007

B DOT II T/S



F106 LIGHTNING/TK 8/M. THOMAS

TEST NO. 83-033

RUN NO. 16

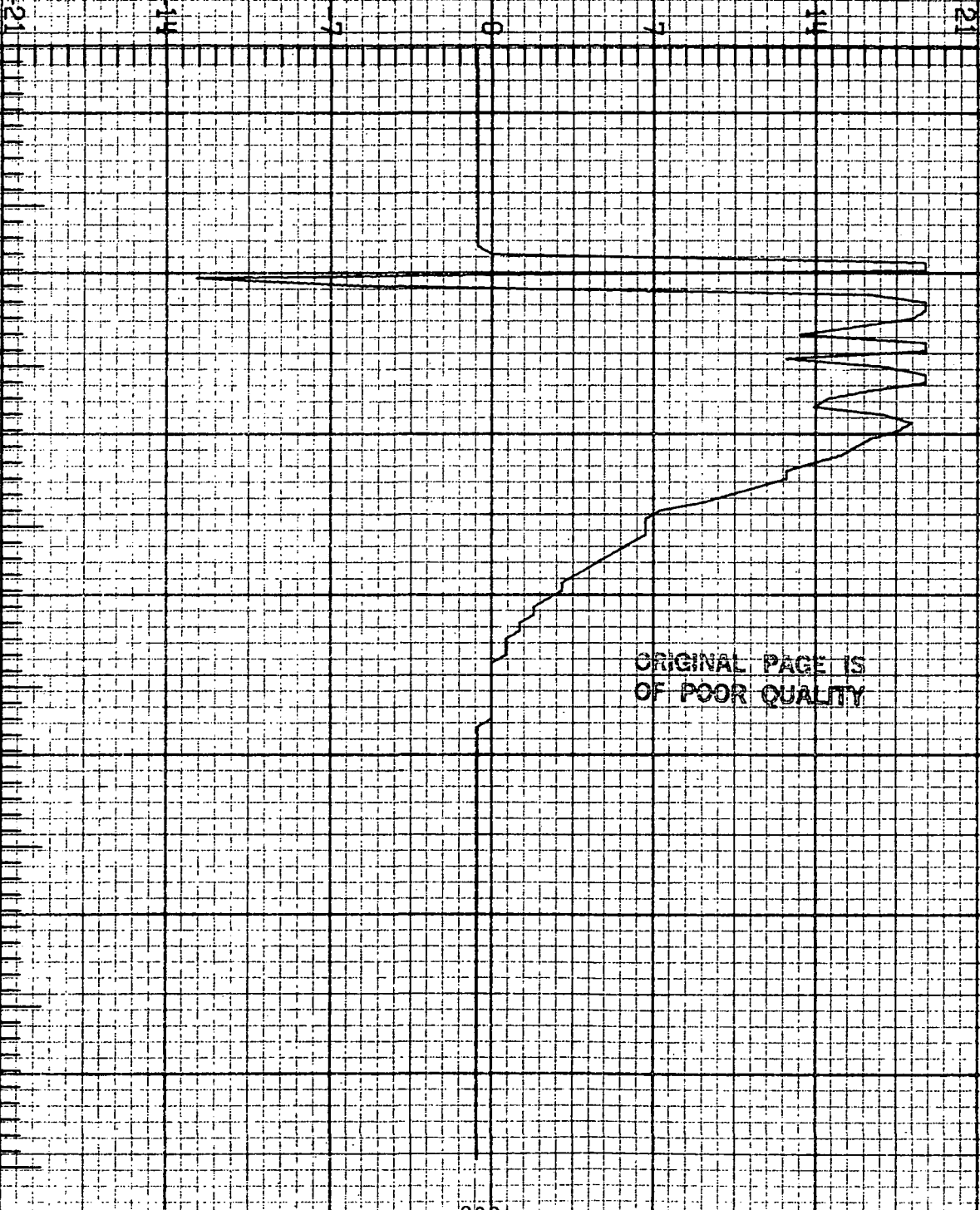
S-012

D DOT FWD  $A/m^2$

20:50:48.9044

MICROSECONDS

329.8  
330.0  
330.2  
330.4  
330.6  
330.8  
331.0  
331.2



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OF POOR QUALITY

F106 LIGHTNING/TK 10/M.THOMAS

TEST NO. 83-033

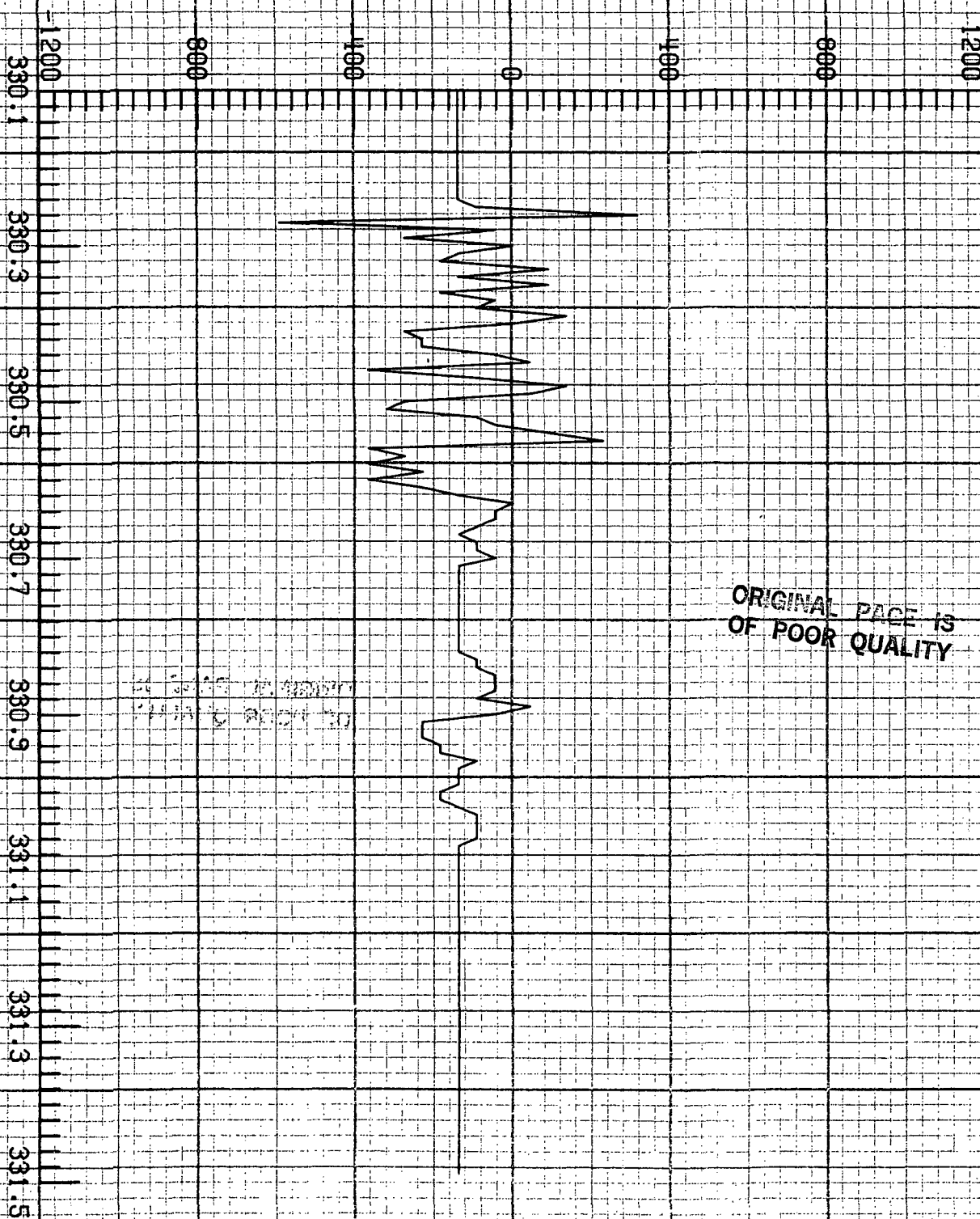
RUN NO. 16

S-012

B DOT II T/S

20:50:48.8551

MICROSECONDS



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F106 LIGHTNING/TK 10/M.THOMAS

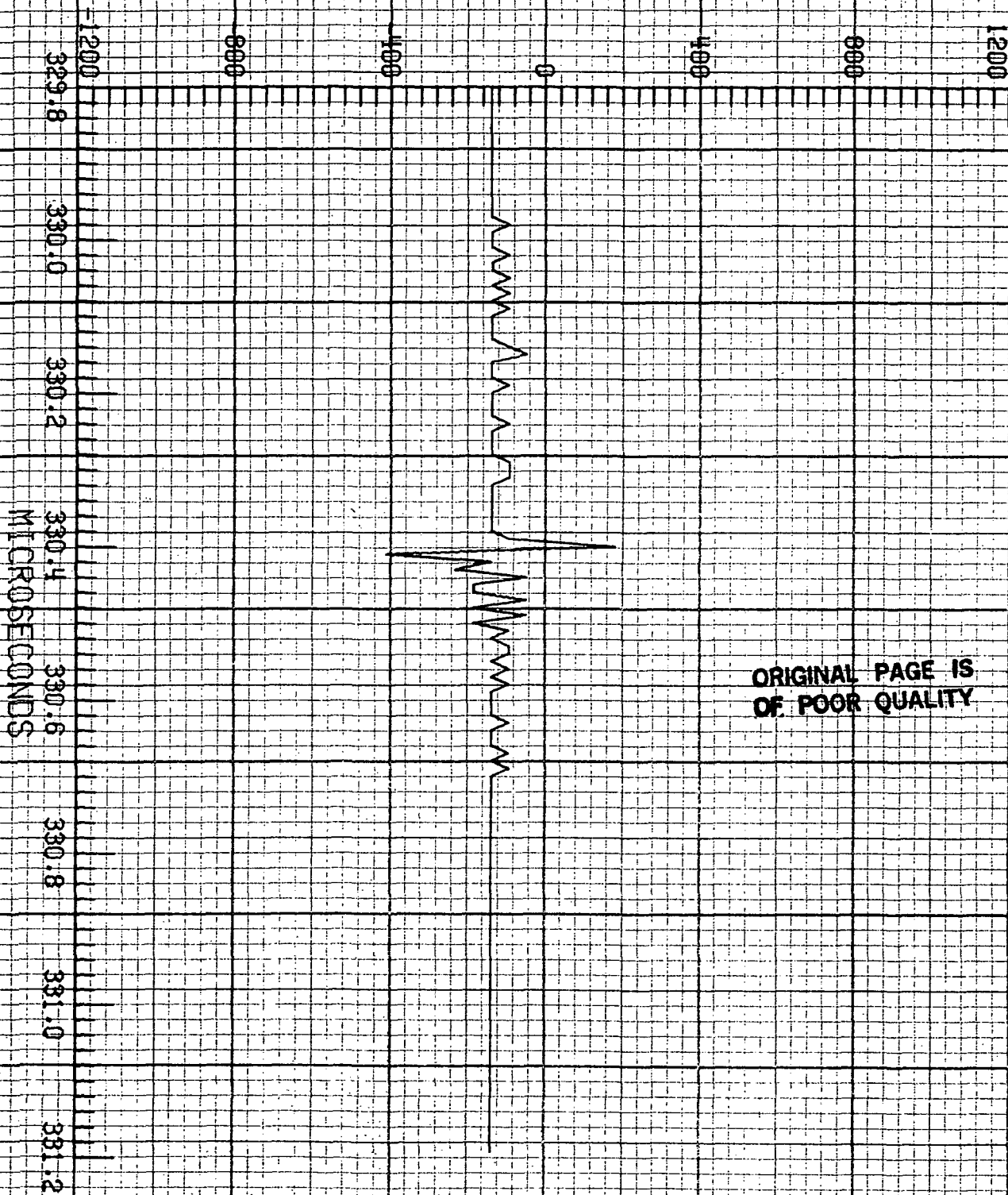
TEST NO. 83-035

RUN NO. 2

N-002

B DOT I T/S

21:47:31.0838



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F106 LIGHTNING/TK 10/M.THOMAS

TEST NO. 83-035

RUN NO. 3

S=001

B DOT L T/S

-1200 800 400 0 400 800 1200

329.8

330.0

330.2

330.4

330.6

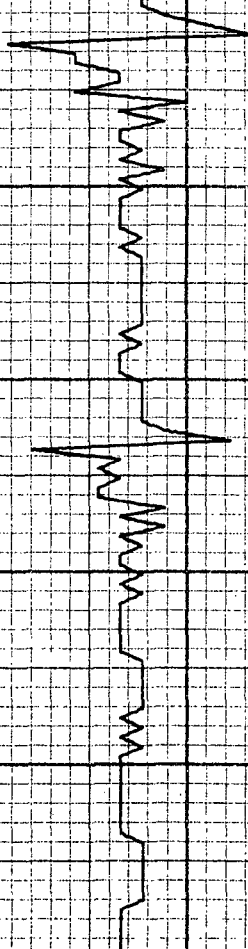
330.8

331.0

331.2

21:51:27.4663

MICROSECONDS



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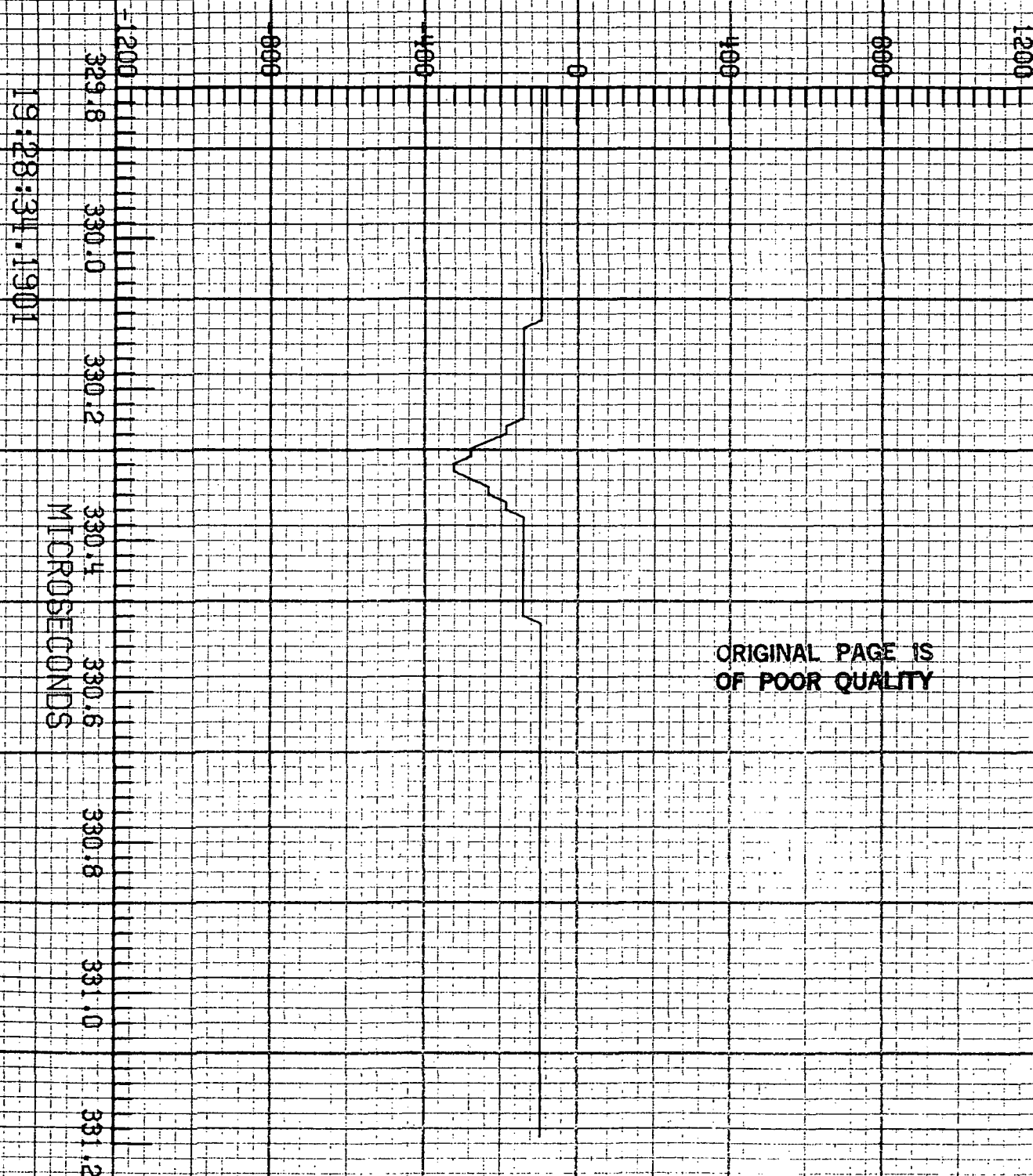
F106 LIGHTNING/TK 10/M.THOMAS

TEST NO. 83-036

RUN NO. 1

N-001

B DOT L T/S



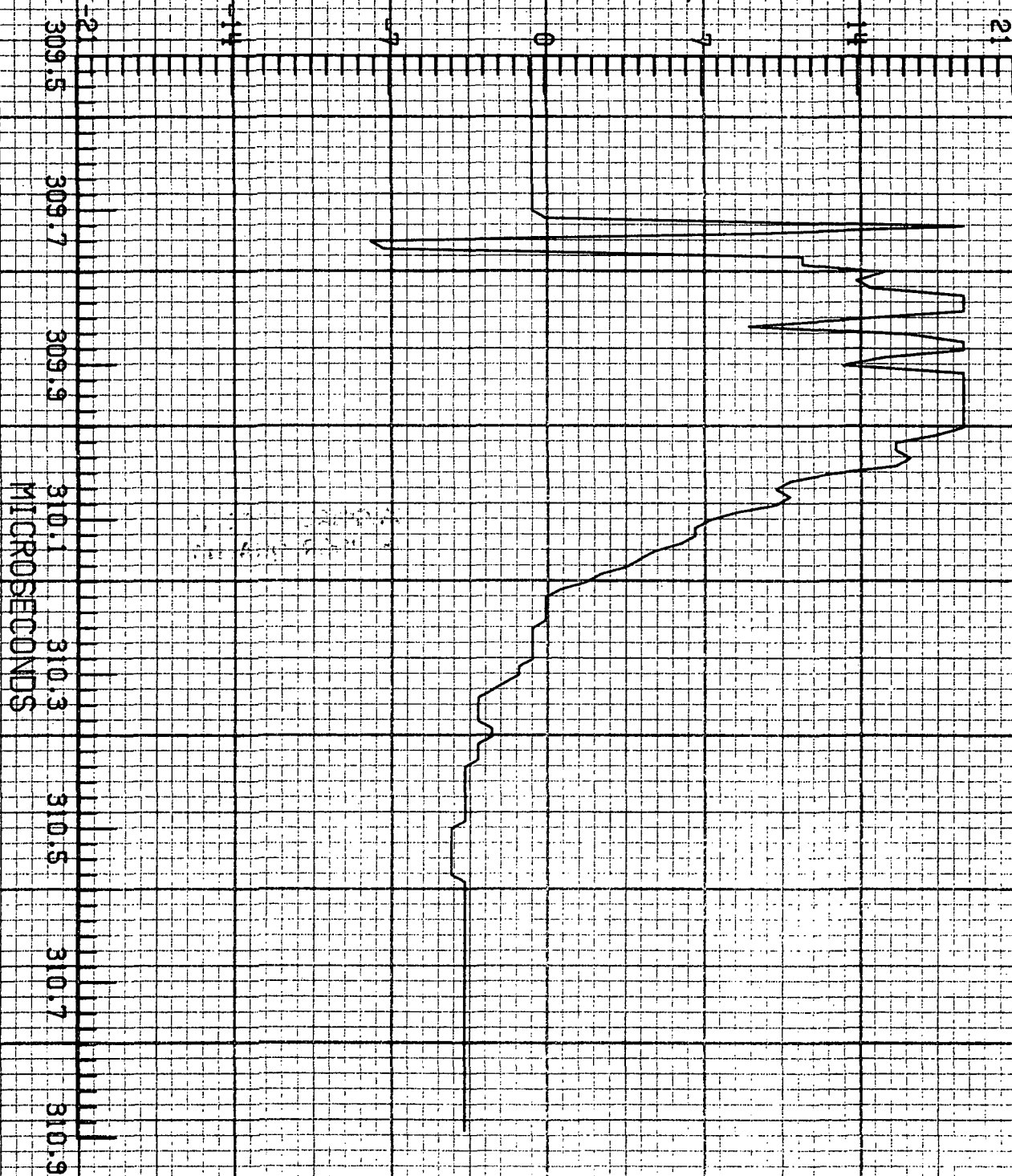
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F106 LIGHTNING/TK 8/M.THOMAS  
RUN NO. 2 S-001

TEST NO. 83-036

D DOT FWD  $A/m^2$





F106 LIGHTNING/TK 10/M.THOMAS  
RUN NO. 2

TEST NO. 83-036

S-001

B DOT I T/S

1200 800 400 0 -400 -800 -1200

330.0

330.2

330.4

330.6

330.8

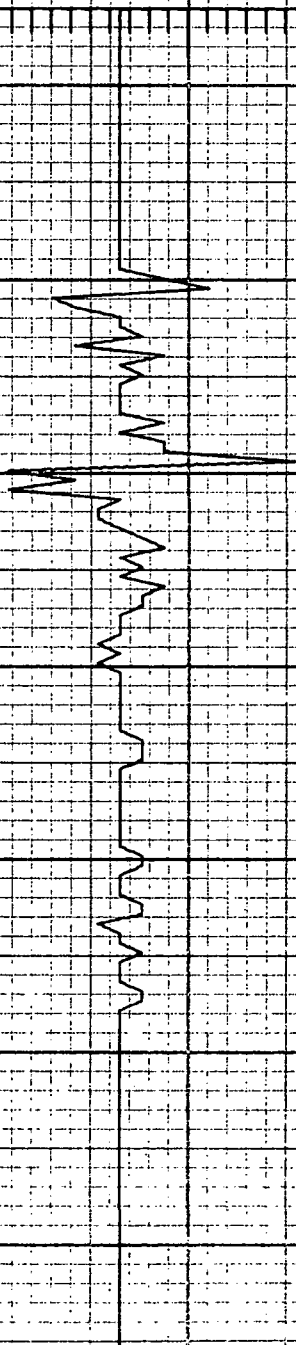
331.0

331.2

331.4

19:28:48.1693

MICROSECONDS



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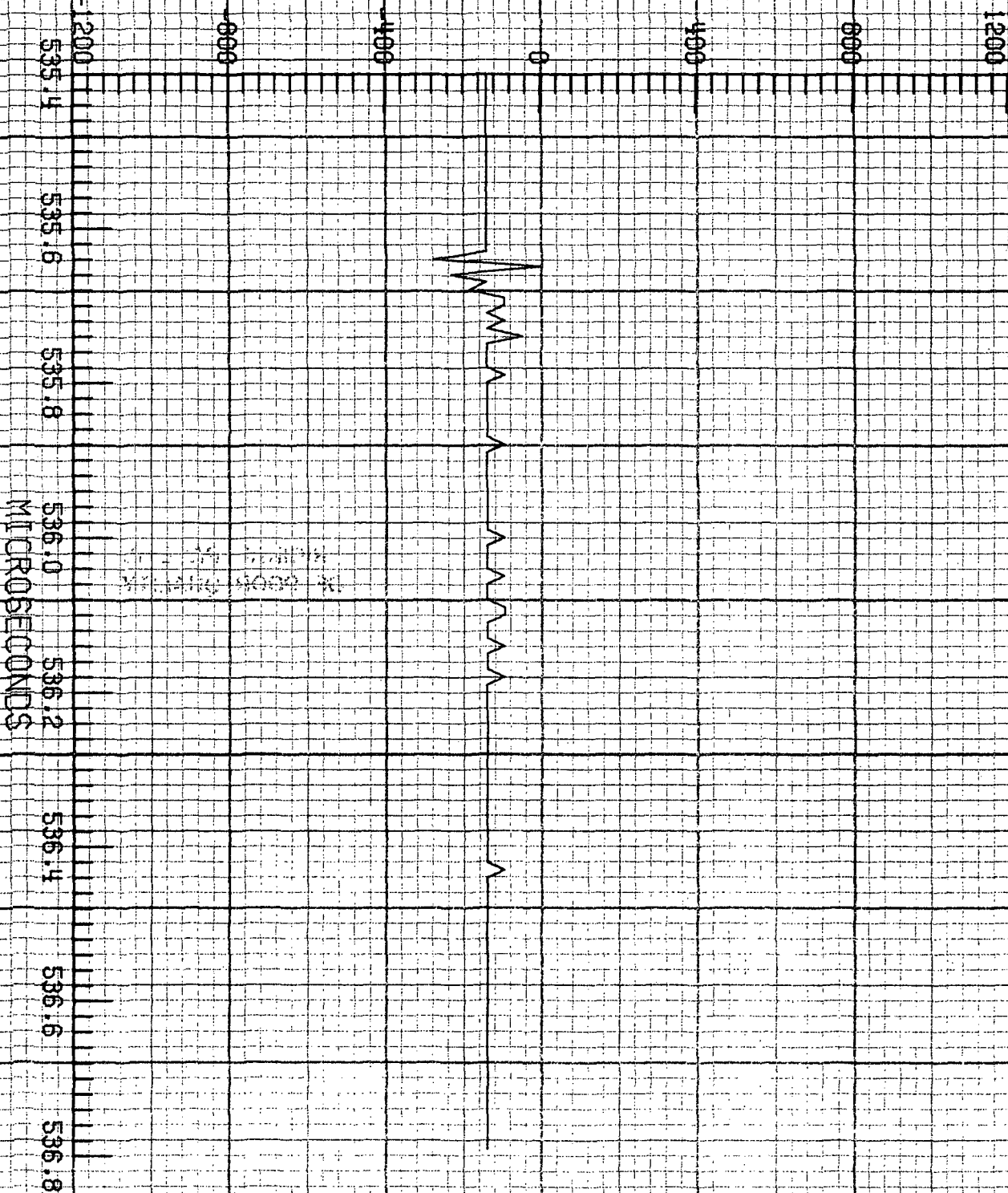
F106 LIGHTNING/TK 10/M. THOMAS

TEST NO. 83-036

RUN NO. 2

S-001

B DOT L T/S



F106 LIGHTNING/TK 10/M.THOMAS

TEST NO. 83-036

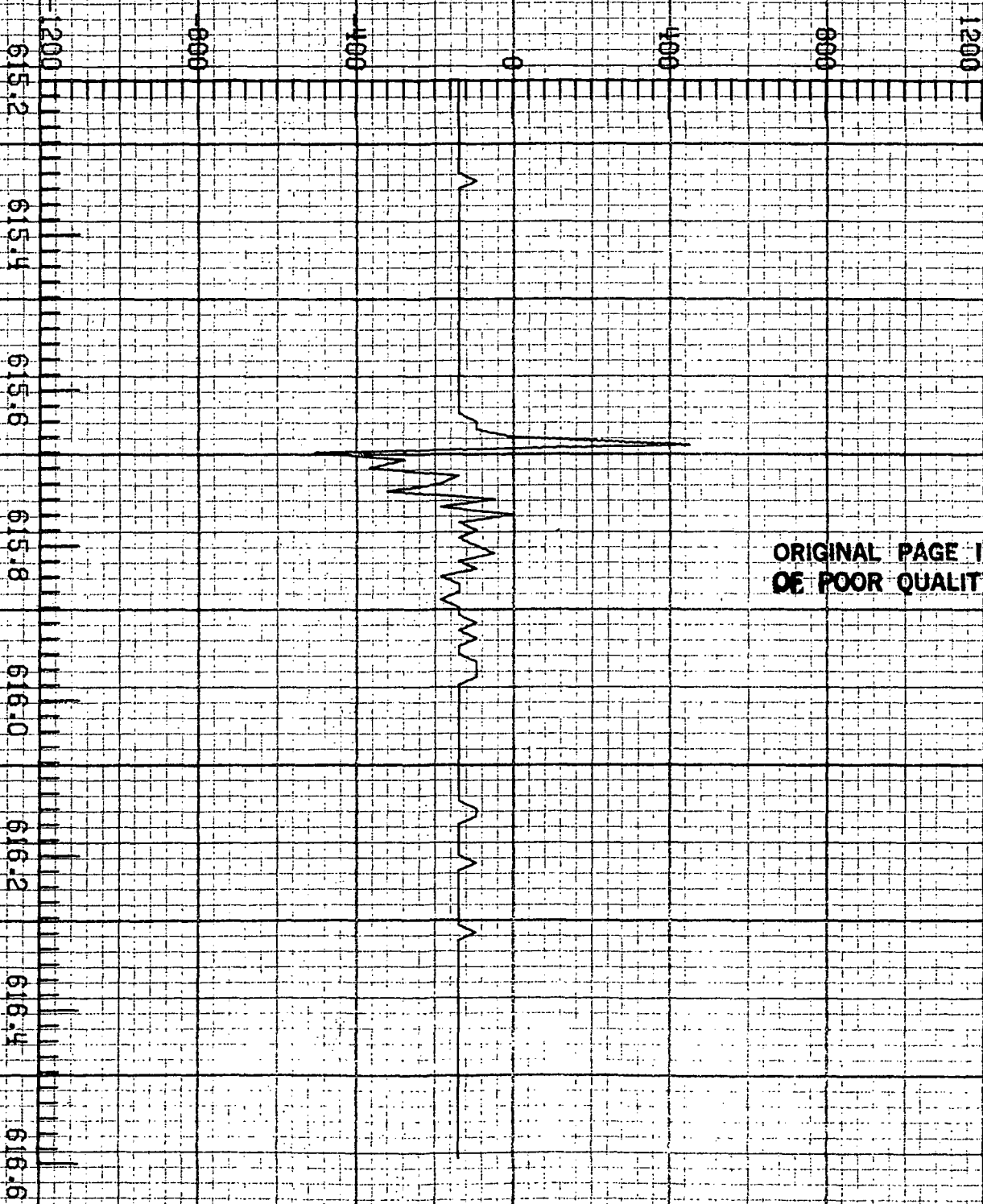
RUN NO. 2

S-001

B DOT L T/S

19:28:48.1698

MICROSECONDS

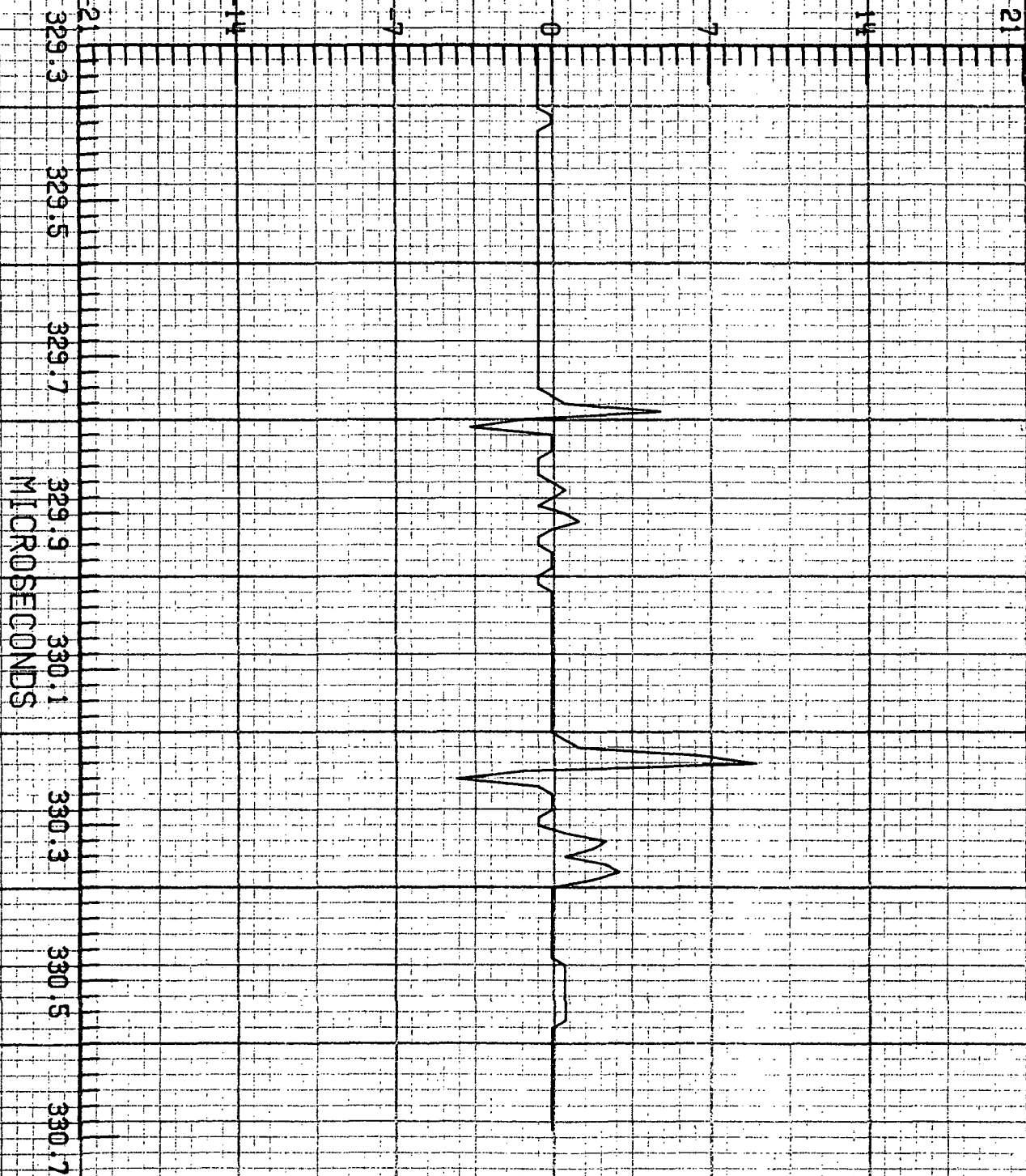


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F106 LIGHTNING/TK 8/M.THOMAS  
RUN NO. 3 S-002

TEST NO. 83-036

D DOT FWD  $A/m^2$



F106 LIGHTNING/TK 10/M.THOMAS

TEST NO. 83-036

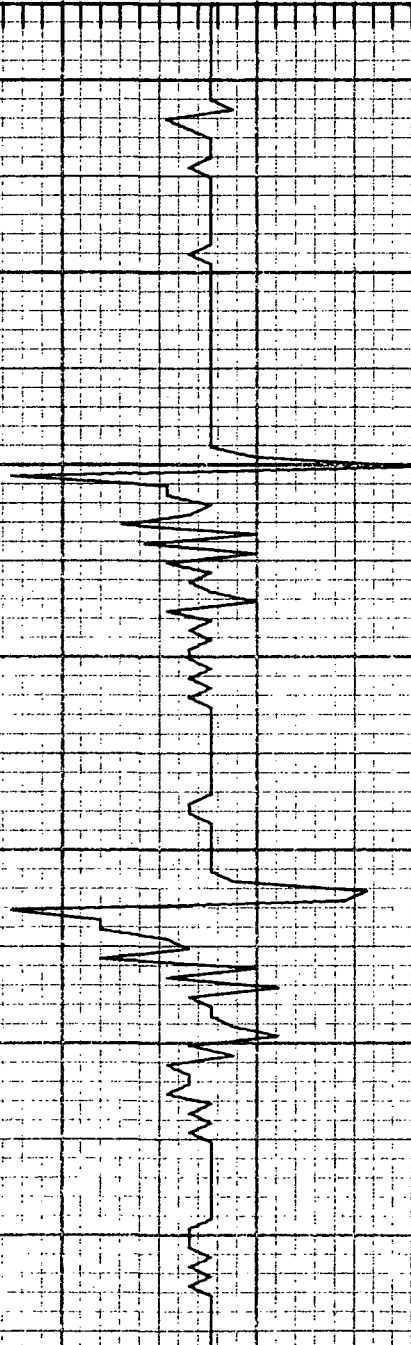
RUN NO. 3

S-002

B DOT U T/S

-1200  
-600  
-400  
0  
400  
600  
1200

19:30:36.0888  
329.7  
329.9  
330.1  
330.3  
330.5  
330.7  
330.9  
331.1  
MICROSECONDS



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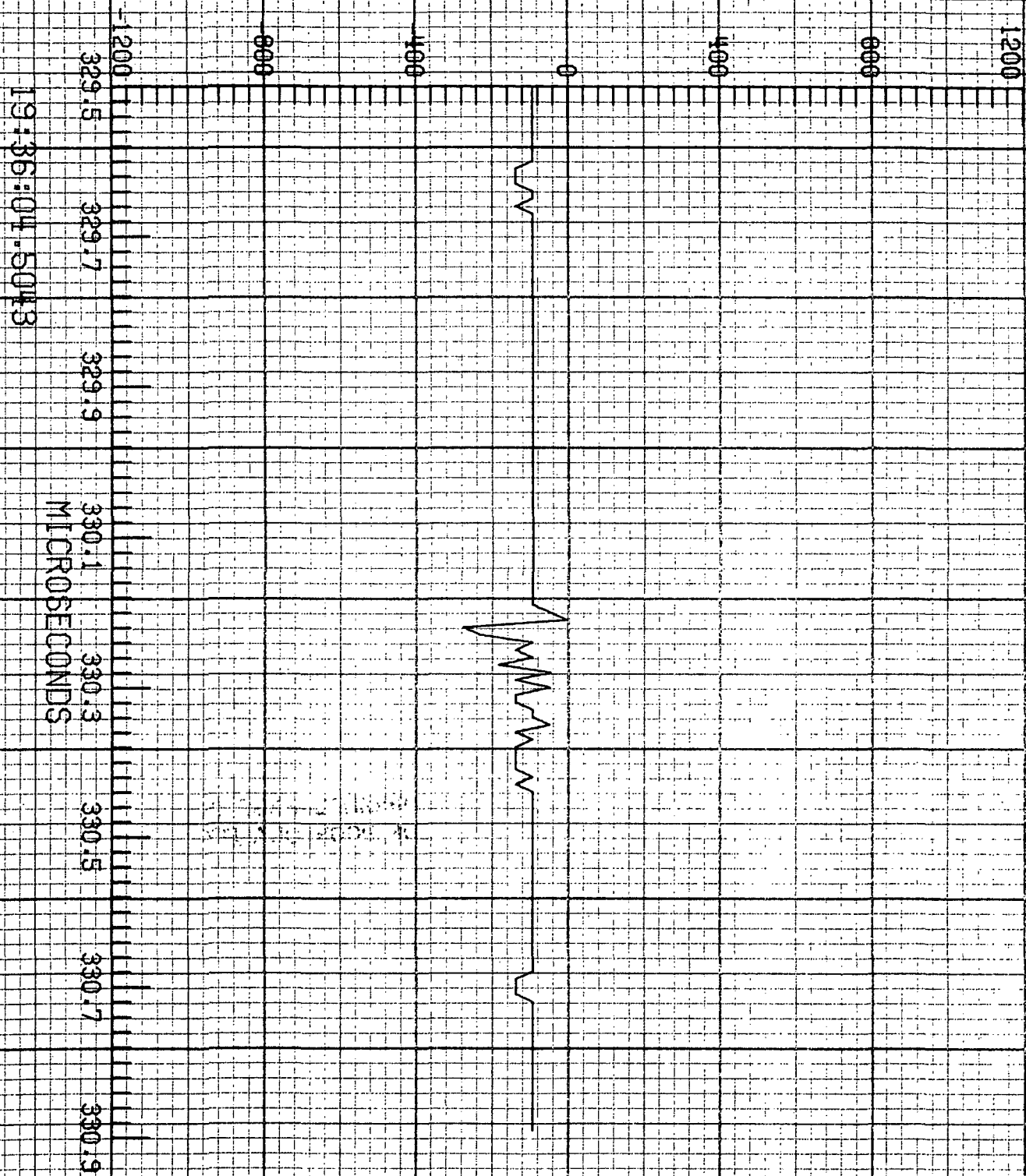
F106 LIGHTNING/TK 10/M.THOMAS

TEST NO. 83-036

RUN NO. 1

S-003

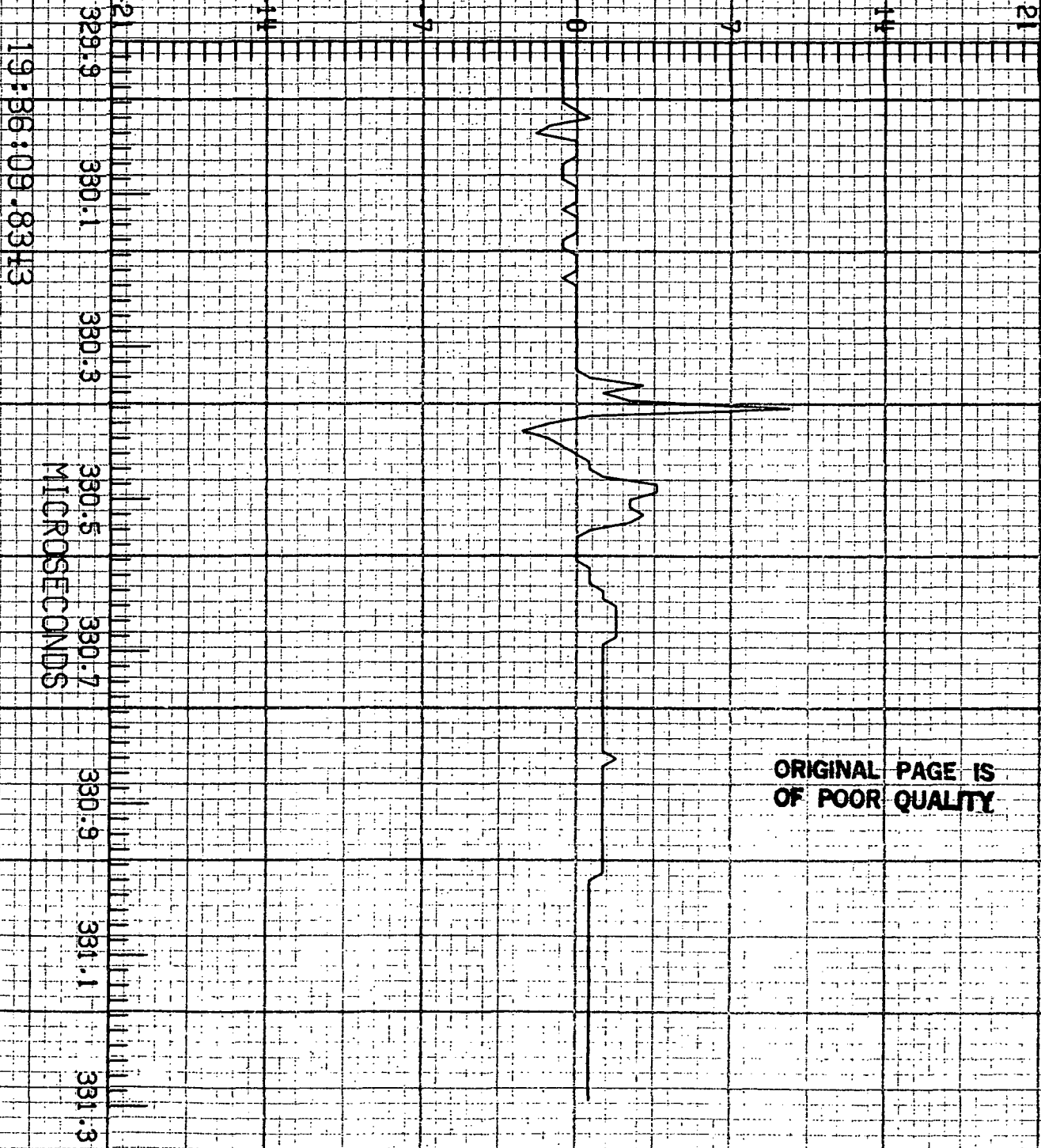
B DOT L T/S



F106 LIGHTNING/TK 8/M.THOMAS  
RUN NO. 5 N-002

TEST NO. 83-036

D DOT FWD  $A/m^2$



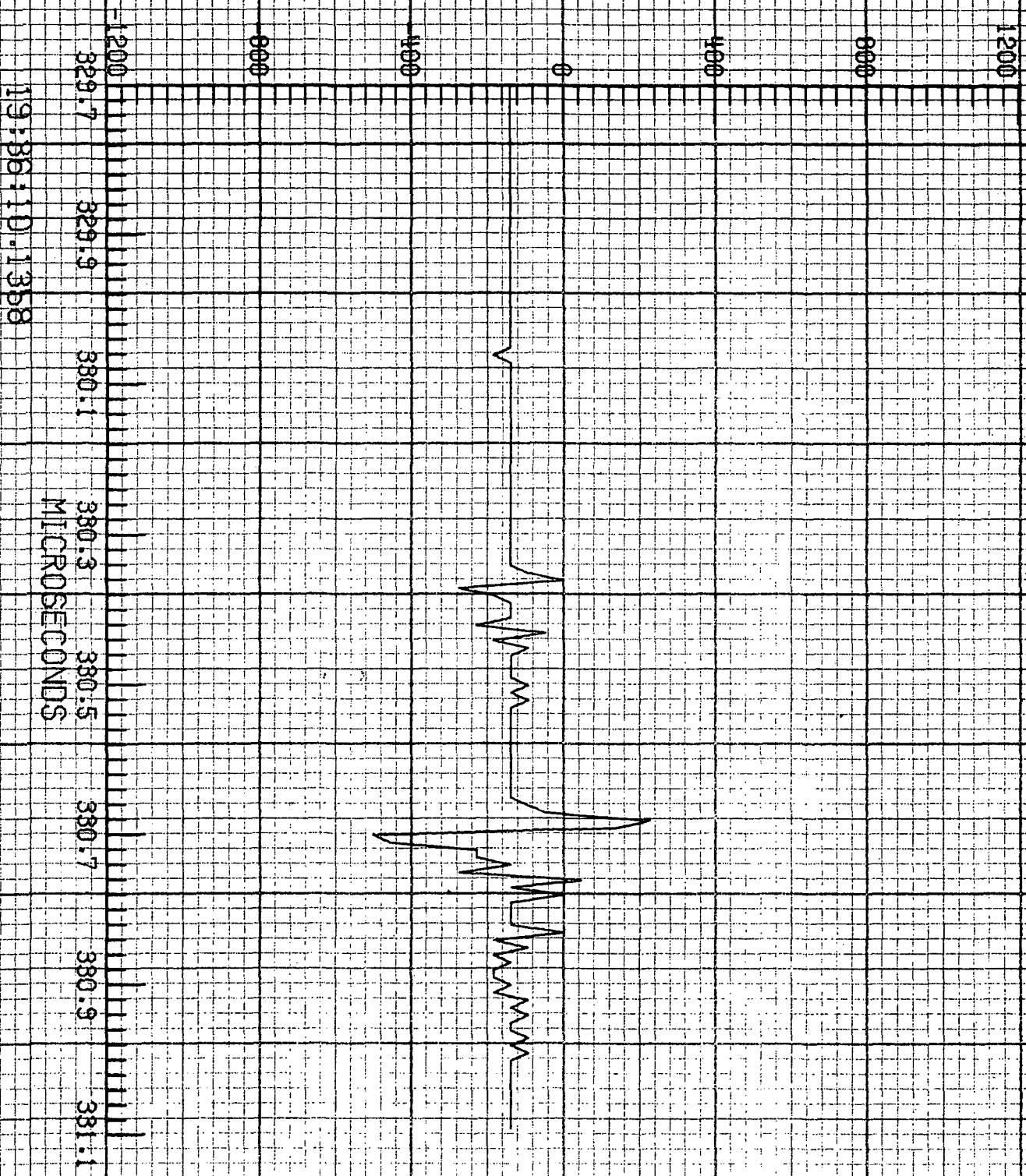


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F106 LIGHTNING/TK 10/M.THOMAS  
RUN NO. 5 N-002

TEST NO. 83-036

B DOT L T/S



F106 LIGHTNING/TK 8/M. THOMAS

TEST NO. 83-036

RUN NO. 6

N-003

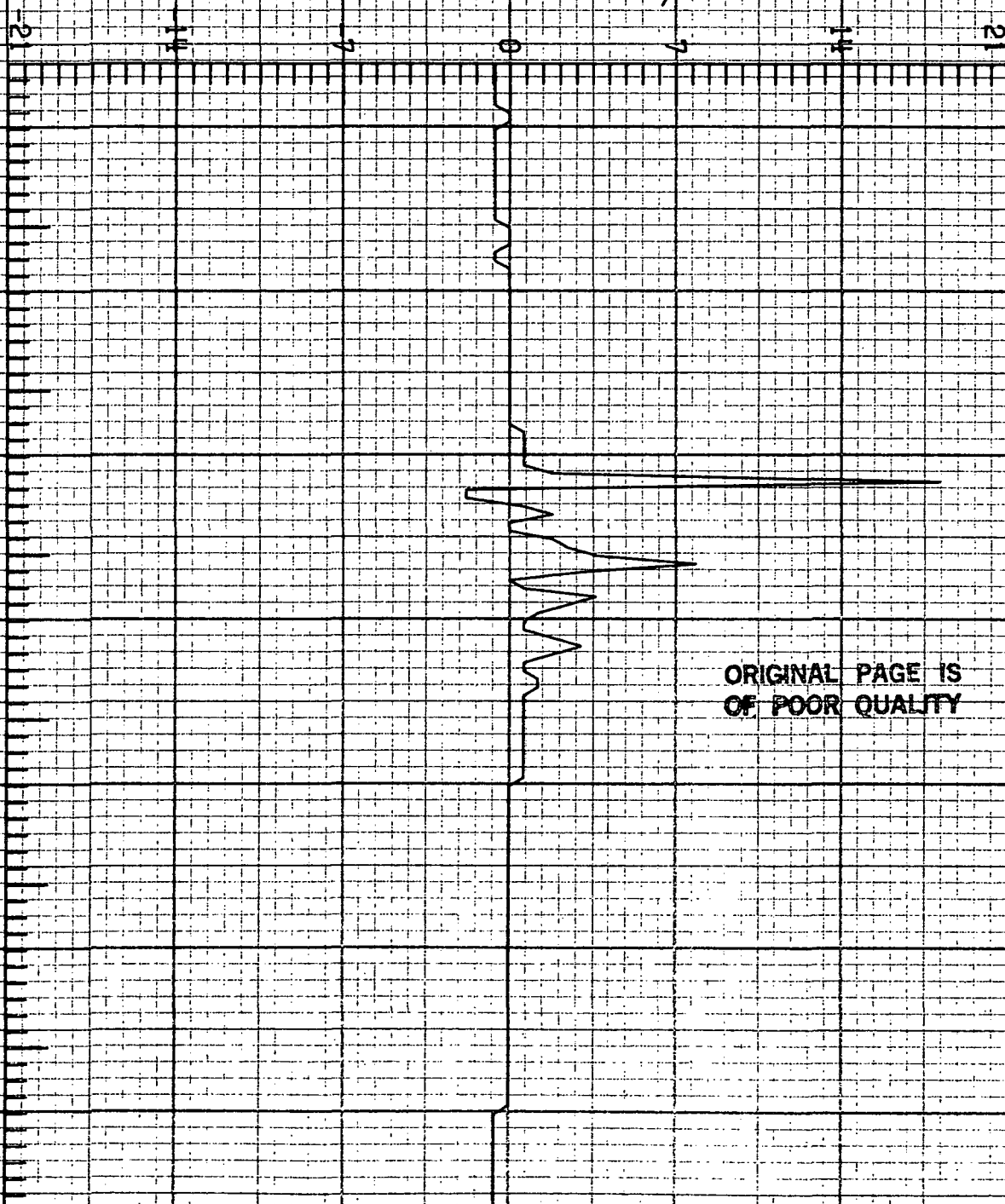
D DOT FWD

A/m<sup>2</sup>

19:40:45.9629

MICROSECONDS

329.7  
329.9  
380.1  
380.3  
380.5  
380.7  
380.9  
381.1



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F106 LIGHTNING/TK 10/M.THOMAS  
RUN NO. 5 N-003

TEST NO. 83-036

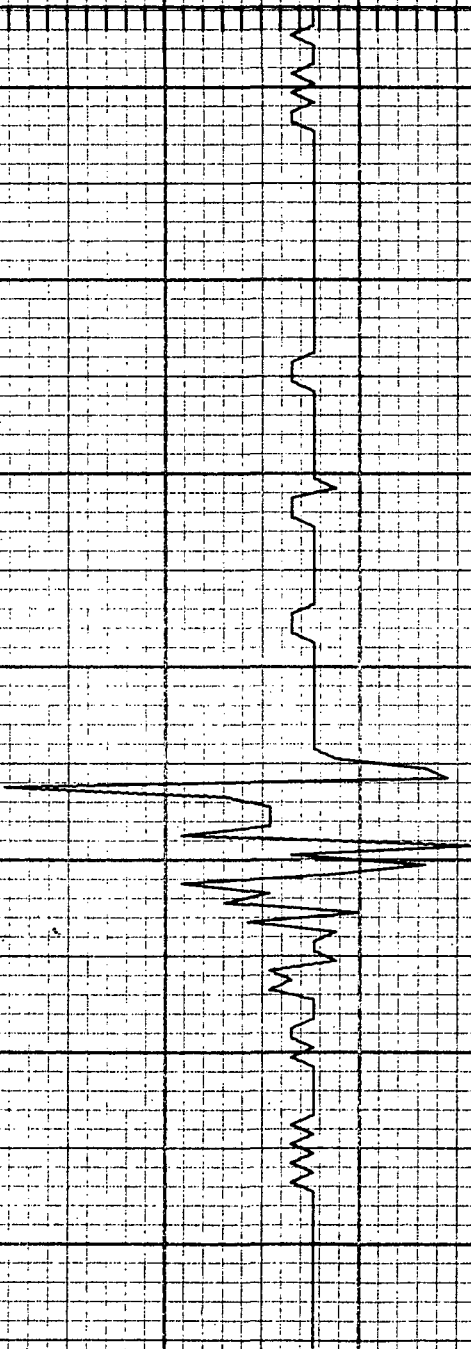
B DOT L T/S

1200 800 400 0 400 800 1200

19:40:45.9634

329.3 329.5 329.7 329.9 330.1 330.3 330.5 330.7  
MICROSECONDS

VOLT

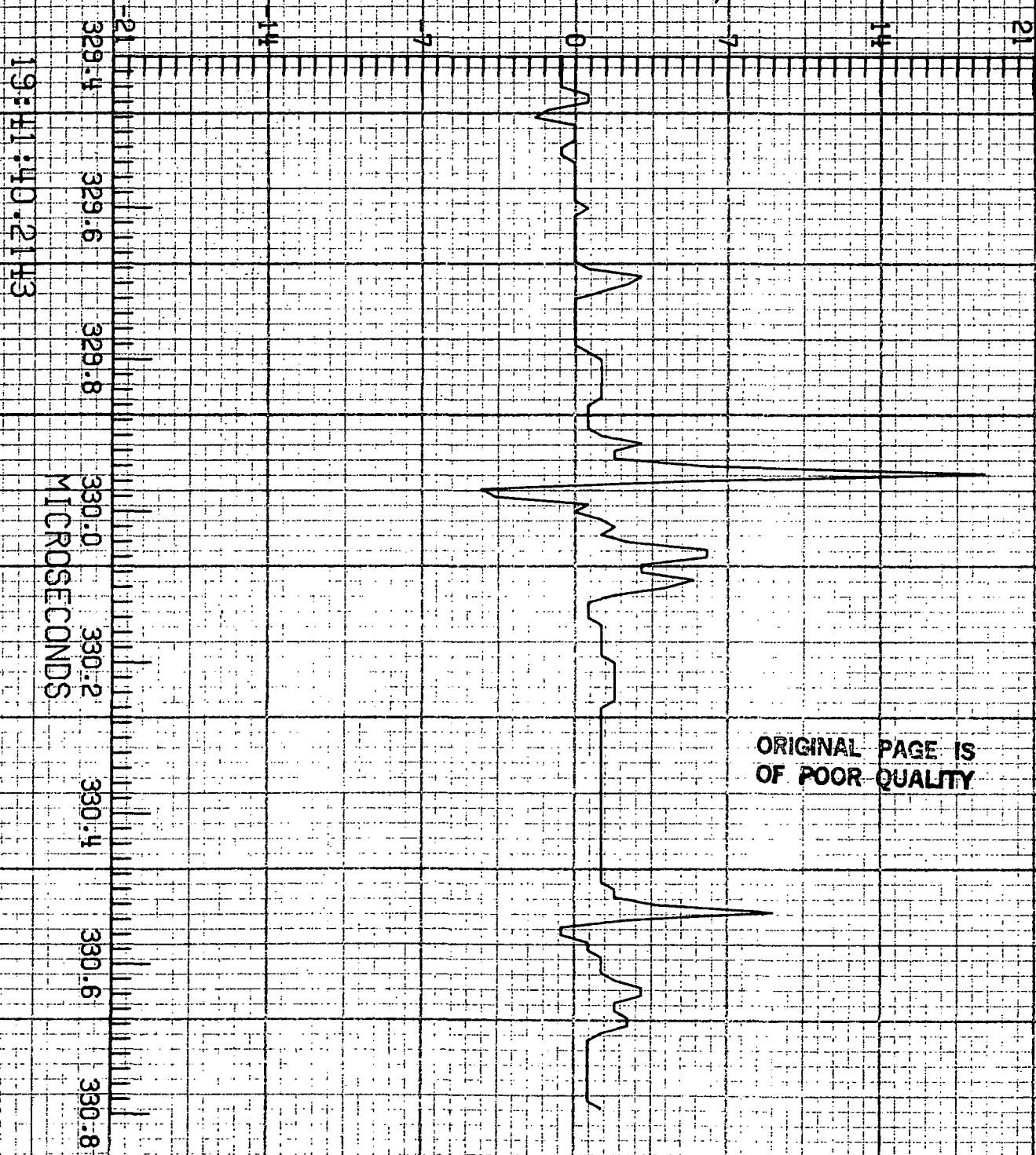


F106 LIGHTNING/TK 8/M.THOMAS  
RUN NO. 7

TEST NO. 83-036

N-004

D DOT FWD  $A/m^2$



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OF POOR QUALITY

F106 LIGHTNING/TK 10/M.THOMAS

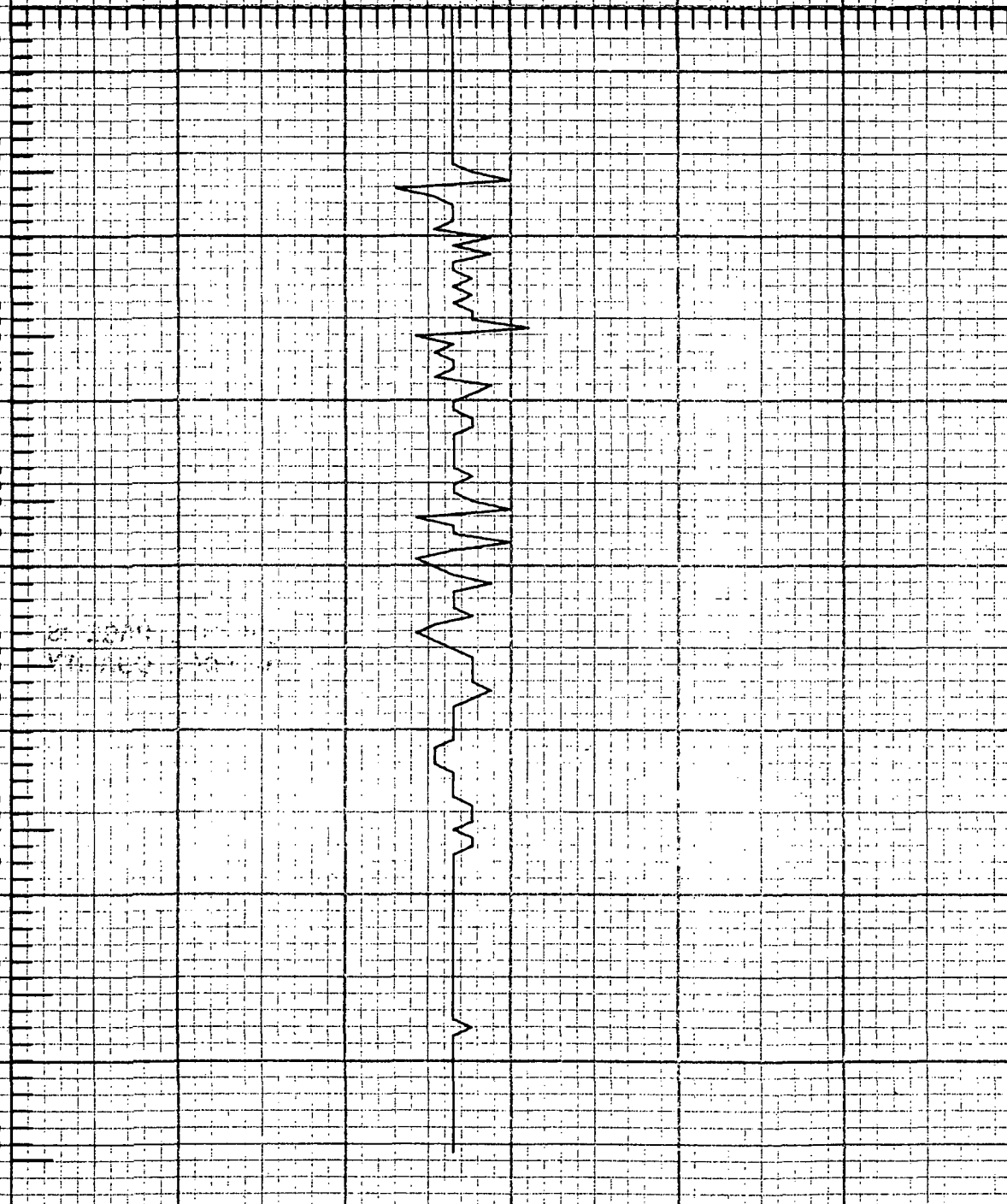
TEST NO. 83-036

RUN NO. 7

N=004

B DOT L T/S

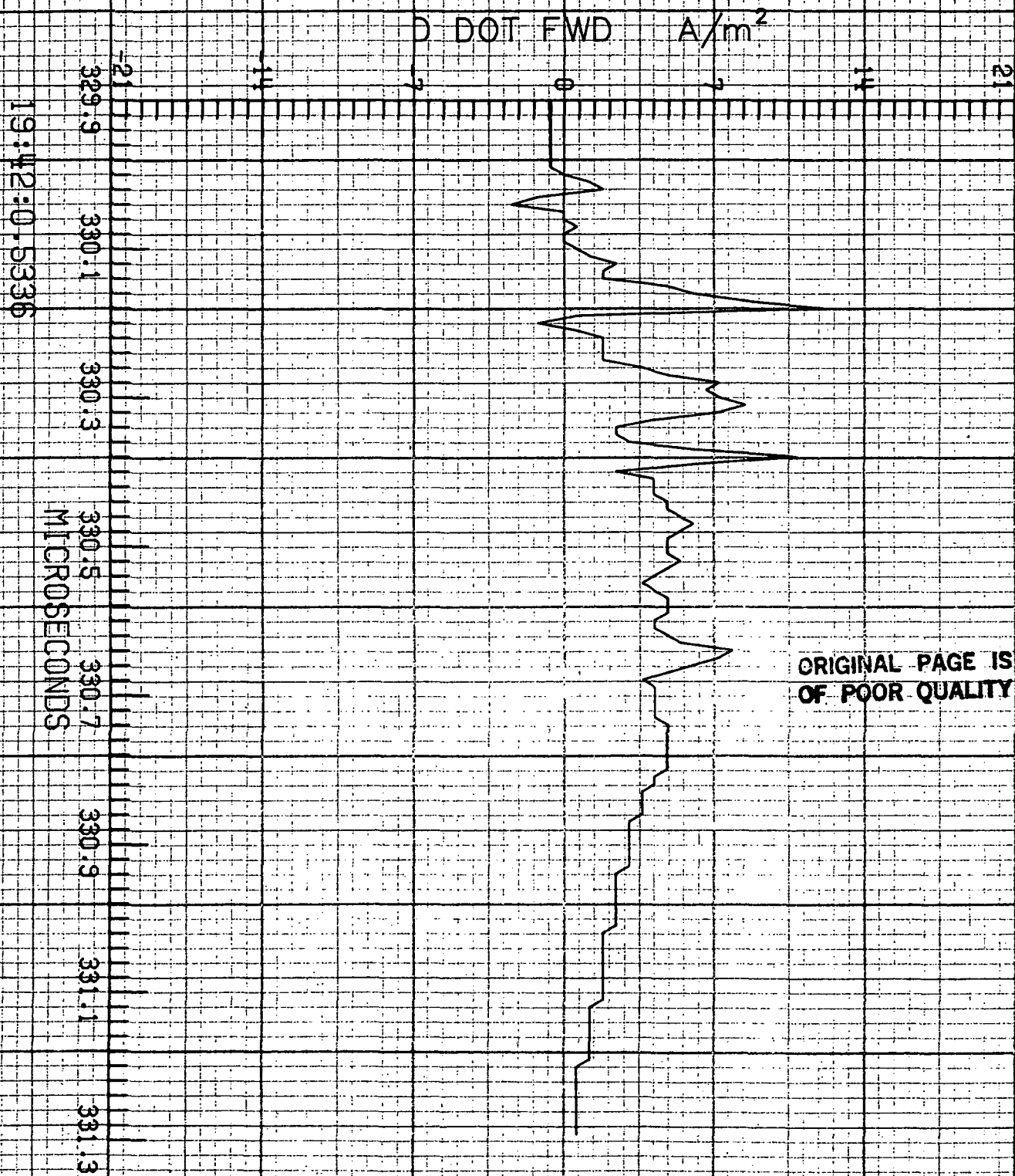
1200  
600  
0  
600  
1200





F106 LIGHTNING/TK 8/M.THOMAS  
RUN NO. 8 N-005

TEST NO. 83-036



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F106 LIGHTNING/TK 10/M. THOMAS

TEST NO. 83-036

RUN NO. 8

N-005

B DOT L T/S

1200 800 400 0 400 800 1200

19:42:0.4934

MICROSECONDS

329.9

330.1

330.3

330.5

330.7

330.9

331.1

331.3



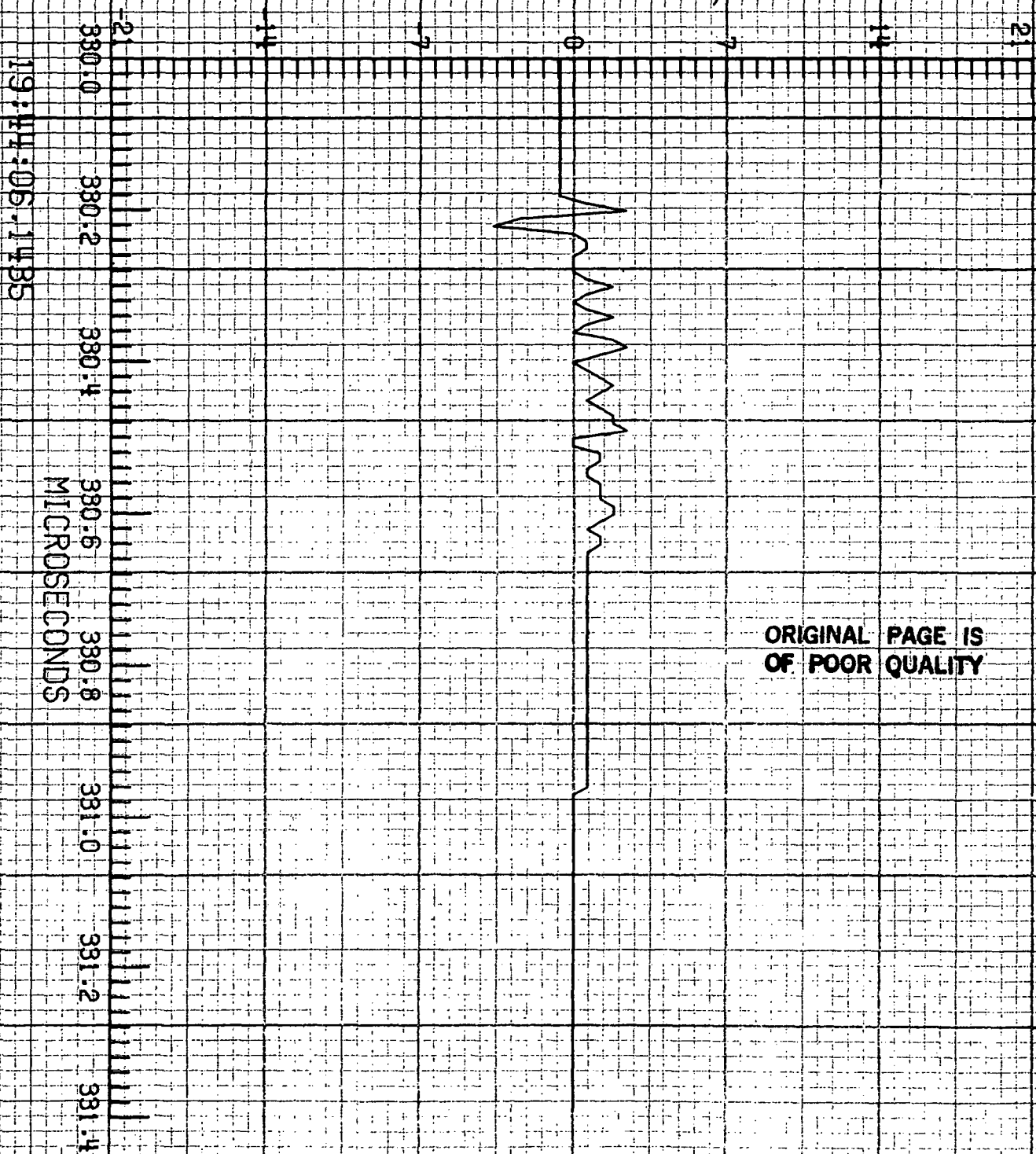
F106 LIGHTNING/TK 8/M. THOMAS

TEST NO. 83-036

RUN NO. 9

N-006

D DOT FWD  $A/m^2$



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OF POOR QUALITY

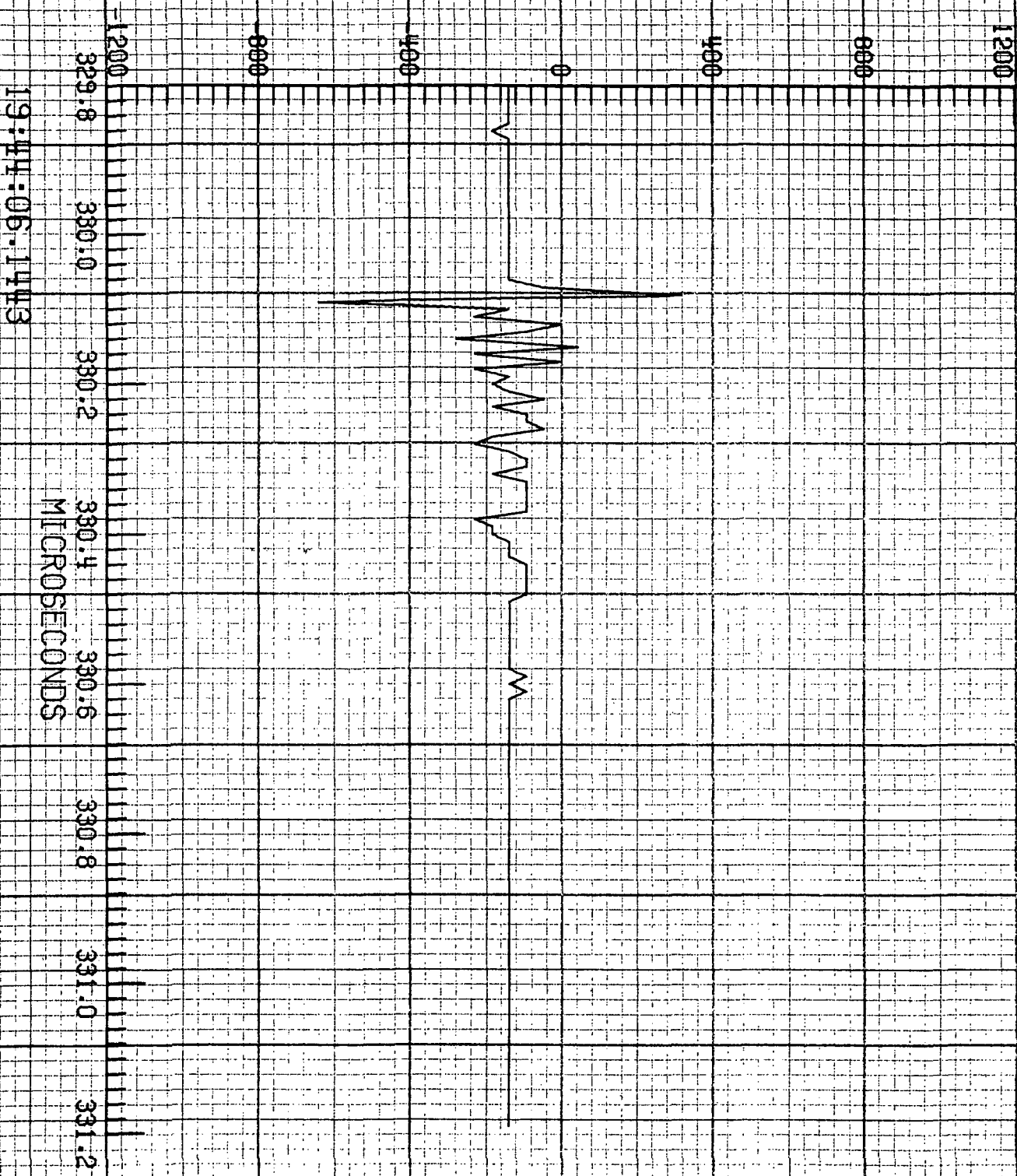
F106 LIGHTNING/TK 10/M.THOMAS

TEST NO. 83-036

RUN NO. 9

N-006

B DOT L T/S



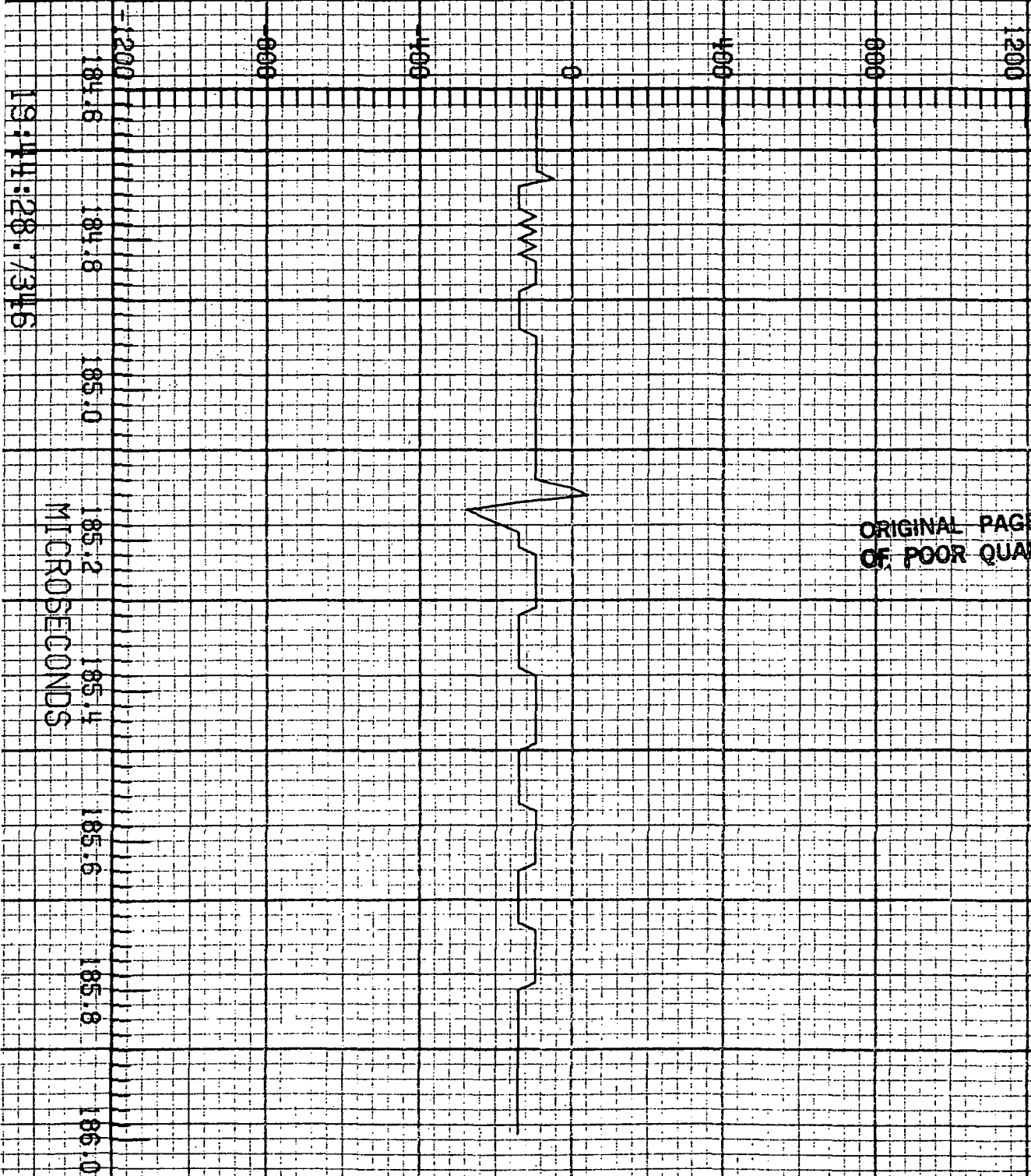
F106 LIGHTNING/TK 10/M.THOMAS

TEST NO. 83-036

RUN NO. 10

N-007

B DOT L T/S



19:44:28.7345

MICROSECONDS

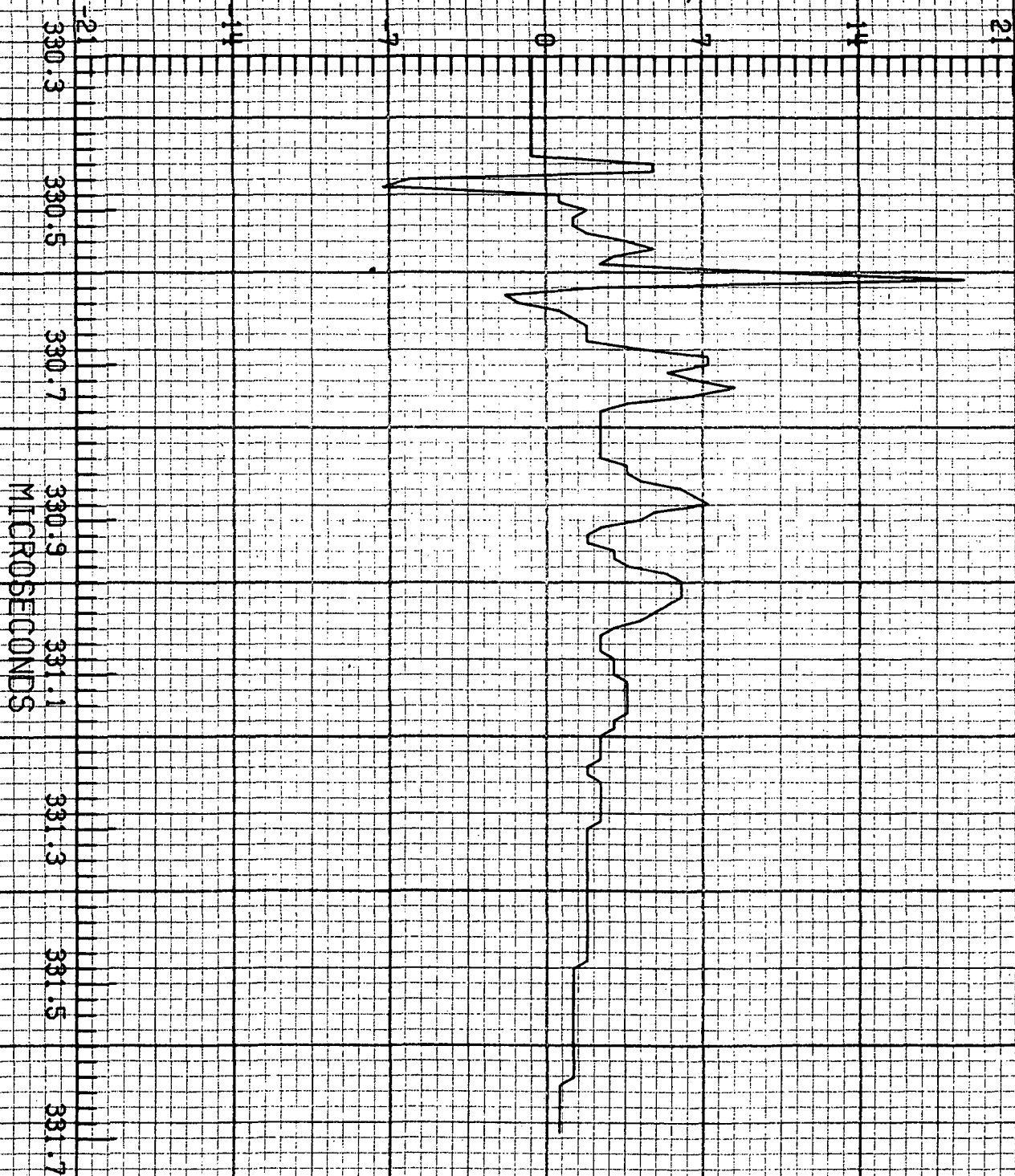
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F106 LIGHTNING/TK 8/M.THOMAS  
RUN NO. 10 N-007

TEST NO. 83-036

D DOT FWD  $A/m^2$



F106 LIGHTNING/TK 10/M.THOMAS

TEST NO. 83-036

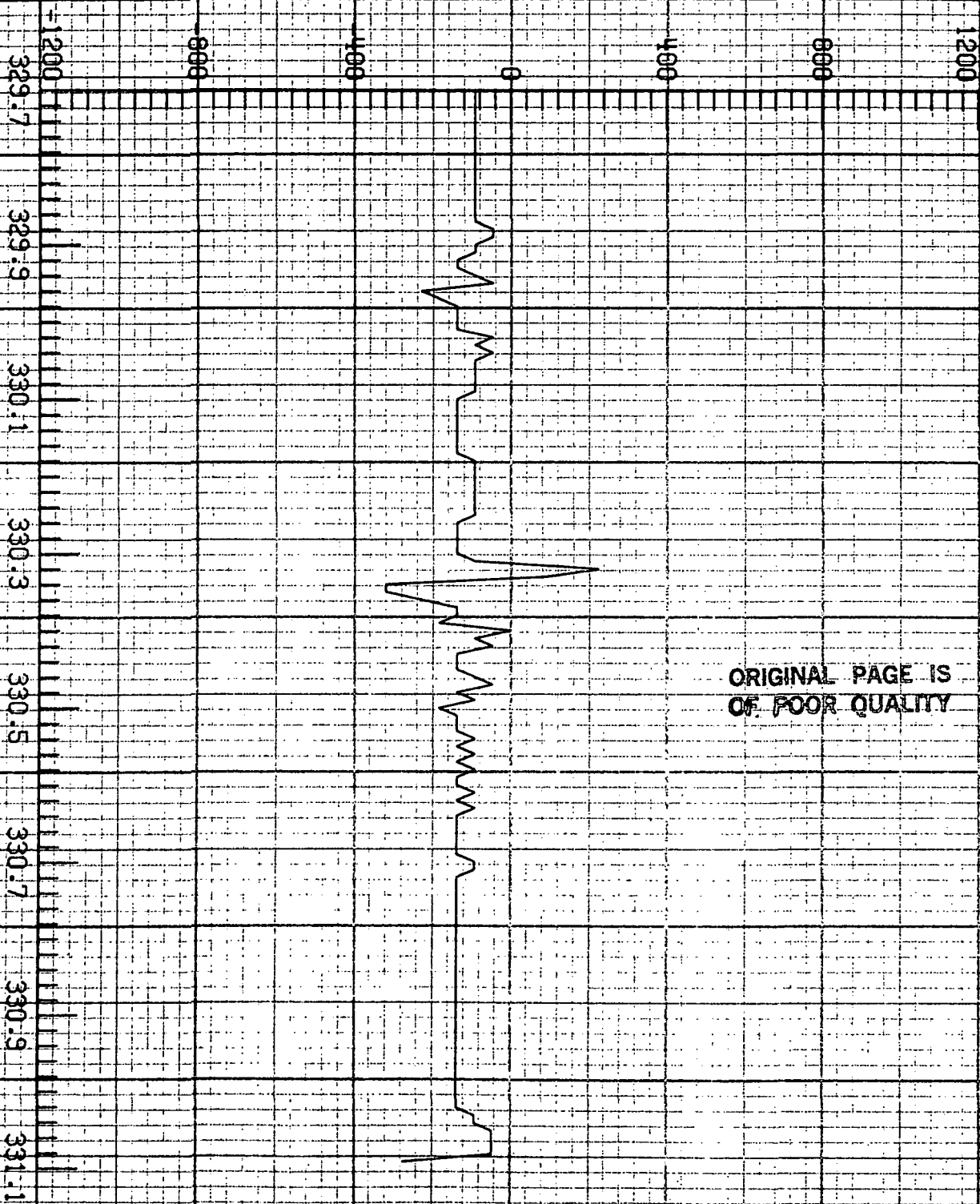
RUN NO. 10

N-007

B DOT L T/S

19:44:28.7346

MICROSECONDS





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OF POOR QUALITY

F106 LIGHTNING/TK 10/M. THOMAS

TEST NO. 83-036

RUN NO. 11

N-008

B DOT L T/S

1200  
800  
400  
0  
-400  
-800  
-1200

329.5 329.7 329.9 330.1 330.3 330.5 330.7 330.9

19:46:56.3696

MICROSECONDS

330.1 330.3 330.5 330.7 330.9

330.1 330.3 330.5 330.7 330.9

330.1 330.3 330.5 330.7 330.9

330.1 330.3 330.5 330.7 330.9

330.1 330.3 330.5 330.7 330.9

330.1 330.3 330.5 330.7 330.9

330.1 330.3 330.5 330.7 330.9

330.1 330.3 330.5 330.7 330.9

330.1 330.3 330.5 330.7 330.9

330.1 330.3 330.5 330.7 330.9

330.1 330.3 330.5 330.7 330.9

330.1 330.3 330.5 330.7 330.9

330.1 330.3 330.5 330.7 330.9

330.1 330.3 330.5 330.7 330.9

330.1 330.3 330.5 330.7 330.9

330.1 330.3 330.5 330.7 330.9

330.1 330.3 330.5 330.7 330.9

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330.1 330.3 330.5 330.7 330.9

330.1 330.3 330.5 330.7 330.9

330.1 330.3 330.5 330.7 330.9

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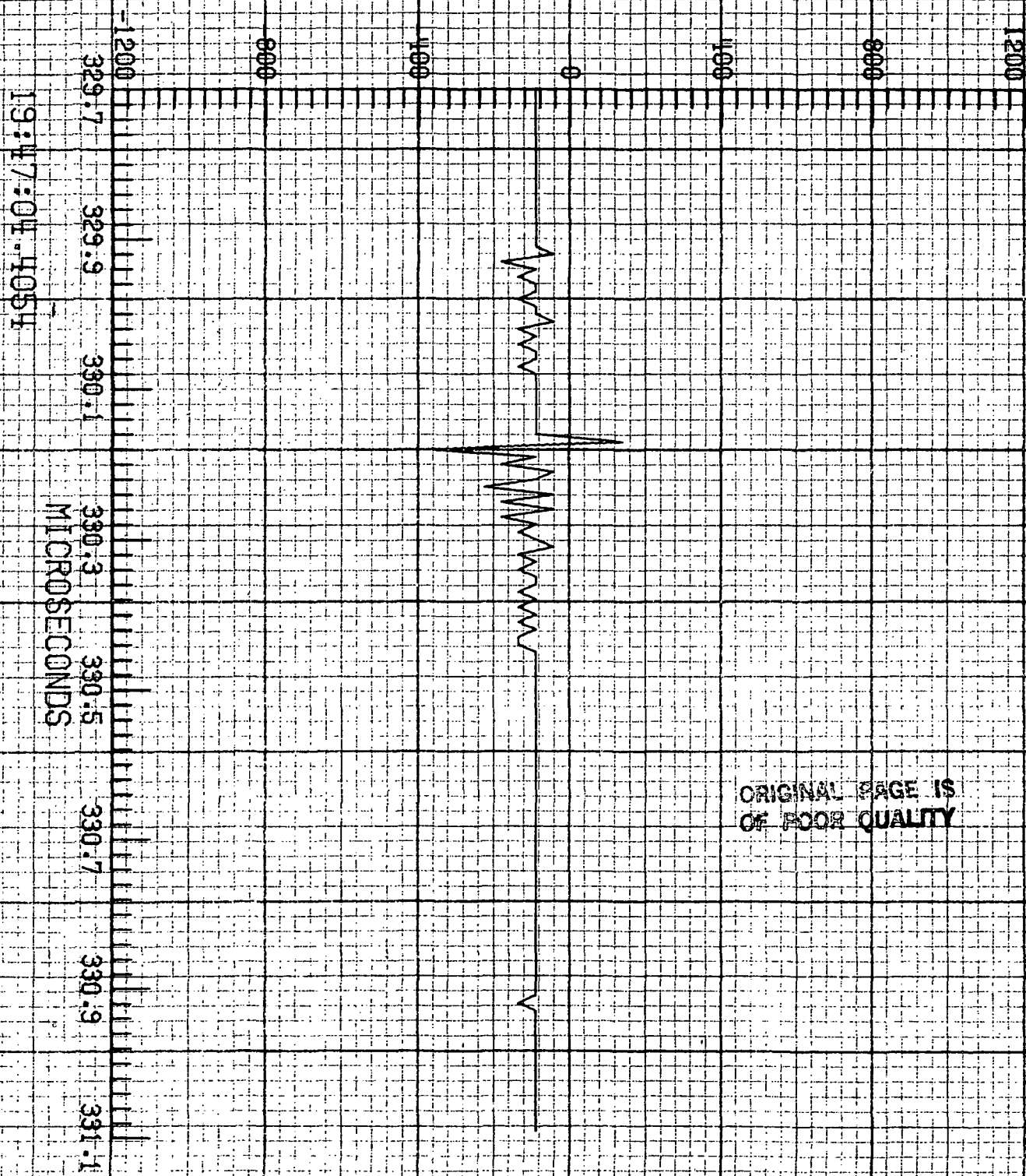
F106 LIGHTNING/TK 10/M. THOMAS

TEST NO. 83-036

RUN NO. 12

S-006

B DOT U T/S



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F106 LIGHTNING/TK 10/M. THOMAS

TEST NO. 83-036

RUN NO. 13

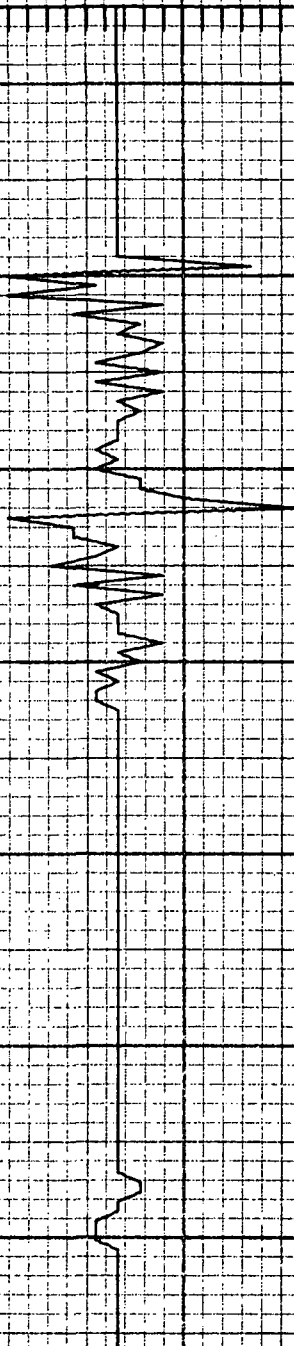
S-008

B DOT I T/S

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19:47:14.9721

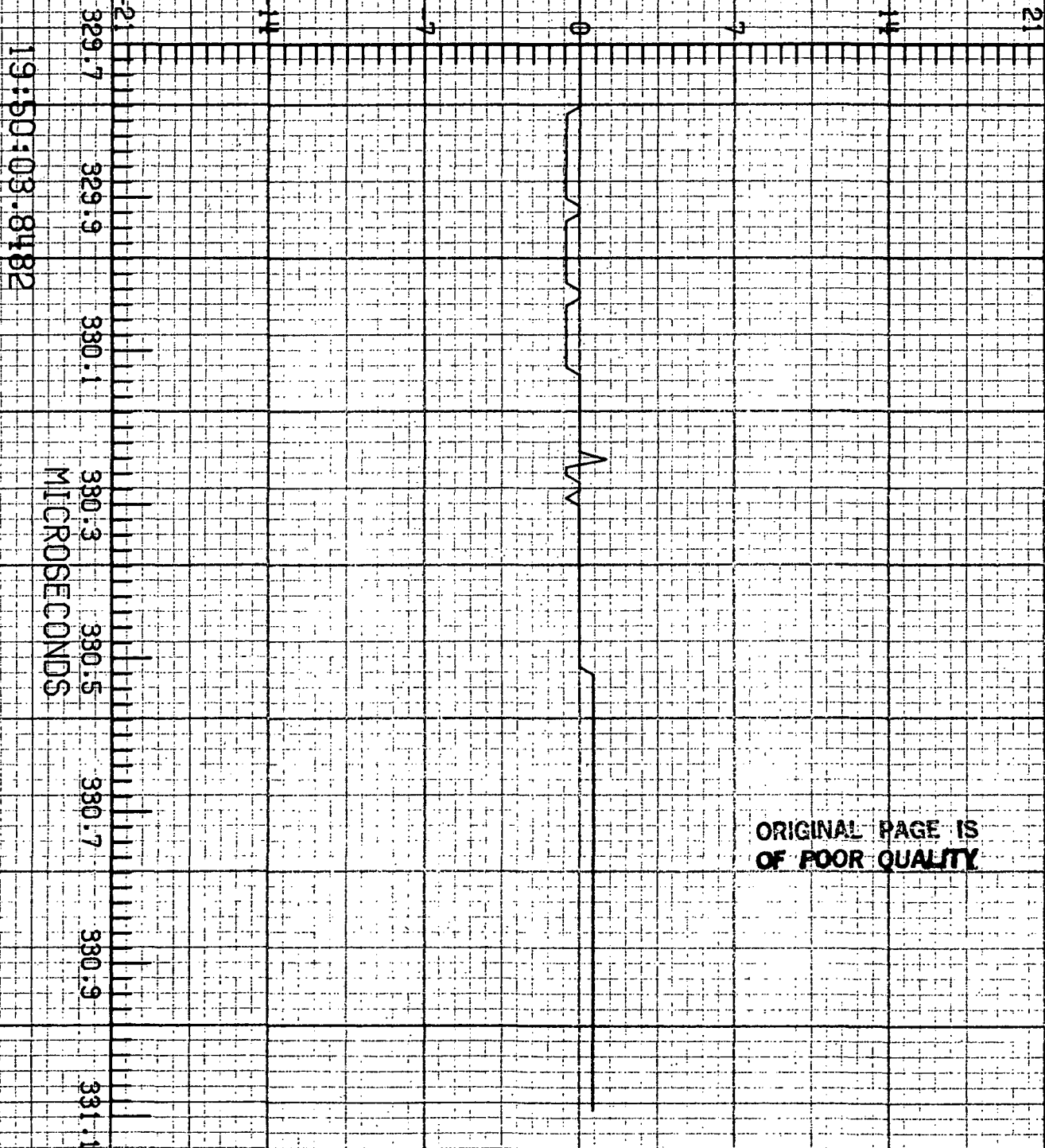
329.9  
330.1  
330.3  
330.5  
330.7  
330.9  
331.1  
331.3  
MICROSECONDS



F-106 LIGHTNING/TK 8/M.THOMAS  
RUN NO. 14 N-009

TEST NO. 83-036

D DOT FWD  $A/m^2$



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F106 LIGHTNING/TK 10/M.THOMAS  
RUN NO. 14

N-009

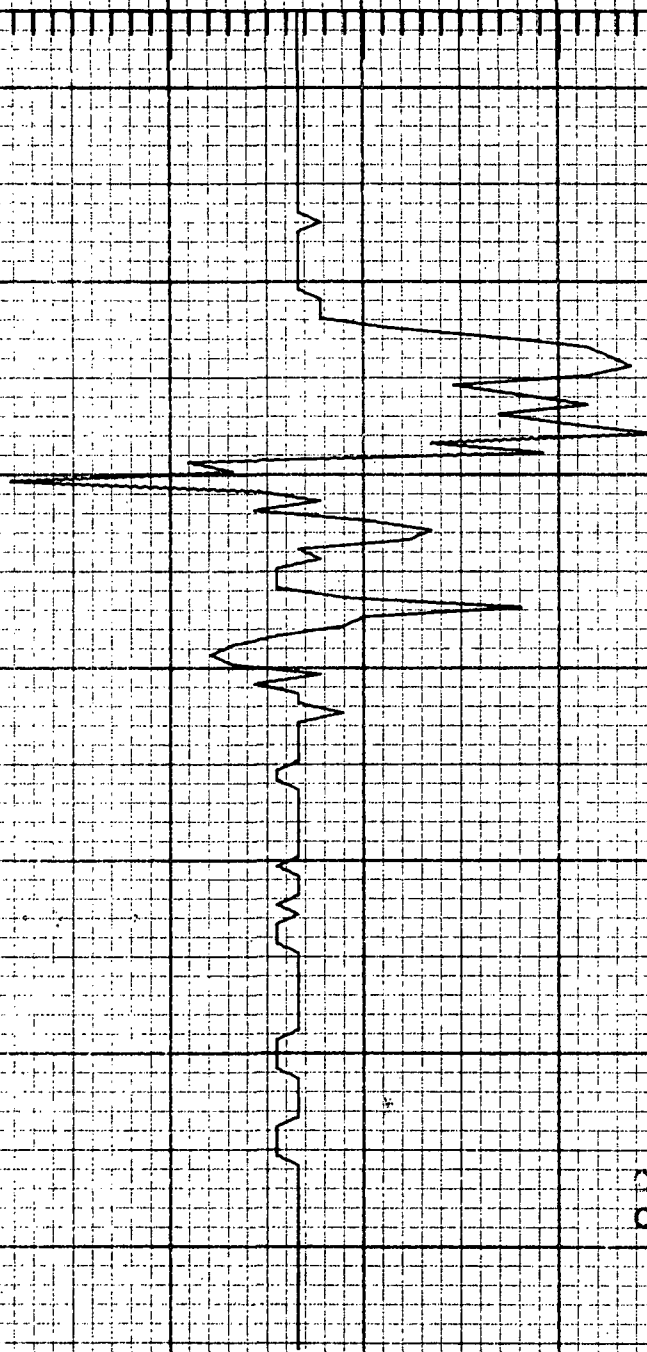
TEST NO. 83-036

B DOT II T/S

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19:50:03.8614

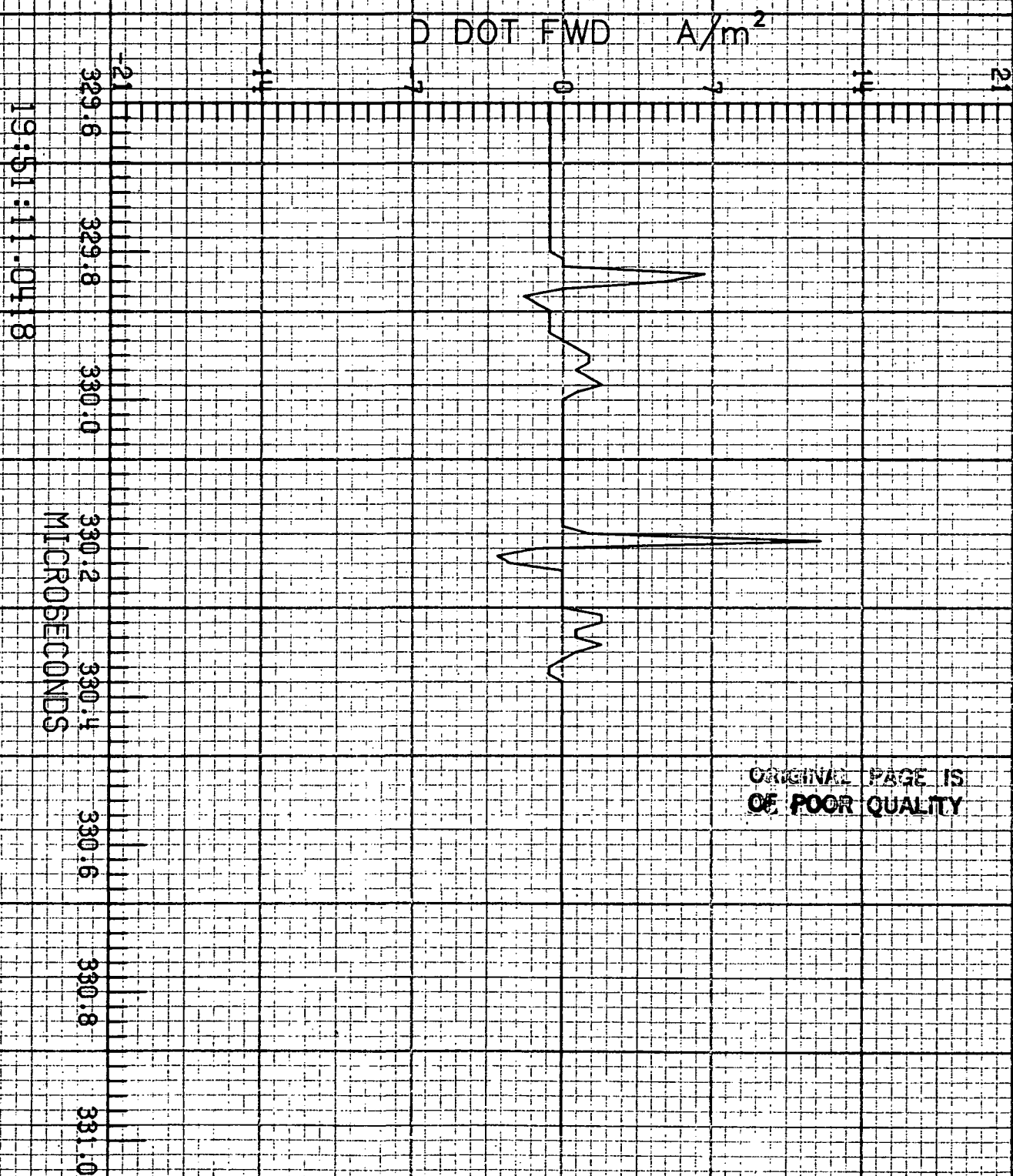
329.9  
330.1  
330.3  
330.5  
330.7  
330.9  
331.1  
331.3  
MICROSECONDS



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F106 LIGHTNING/TK 8/M.THOMAS  
RUN NO. 15 N-010

TEST NO. 83-036



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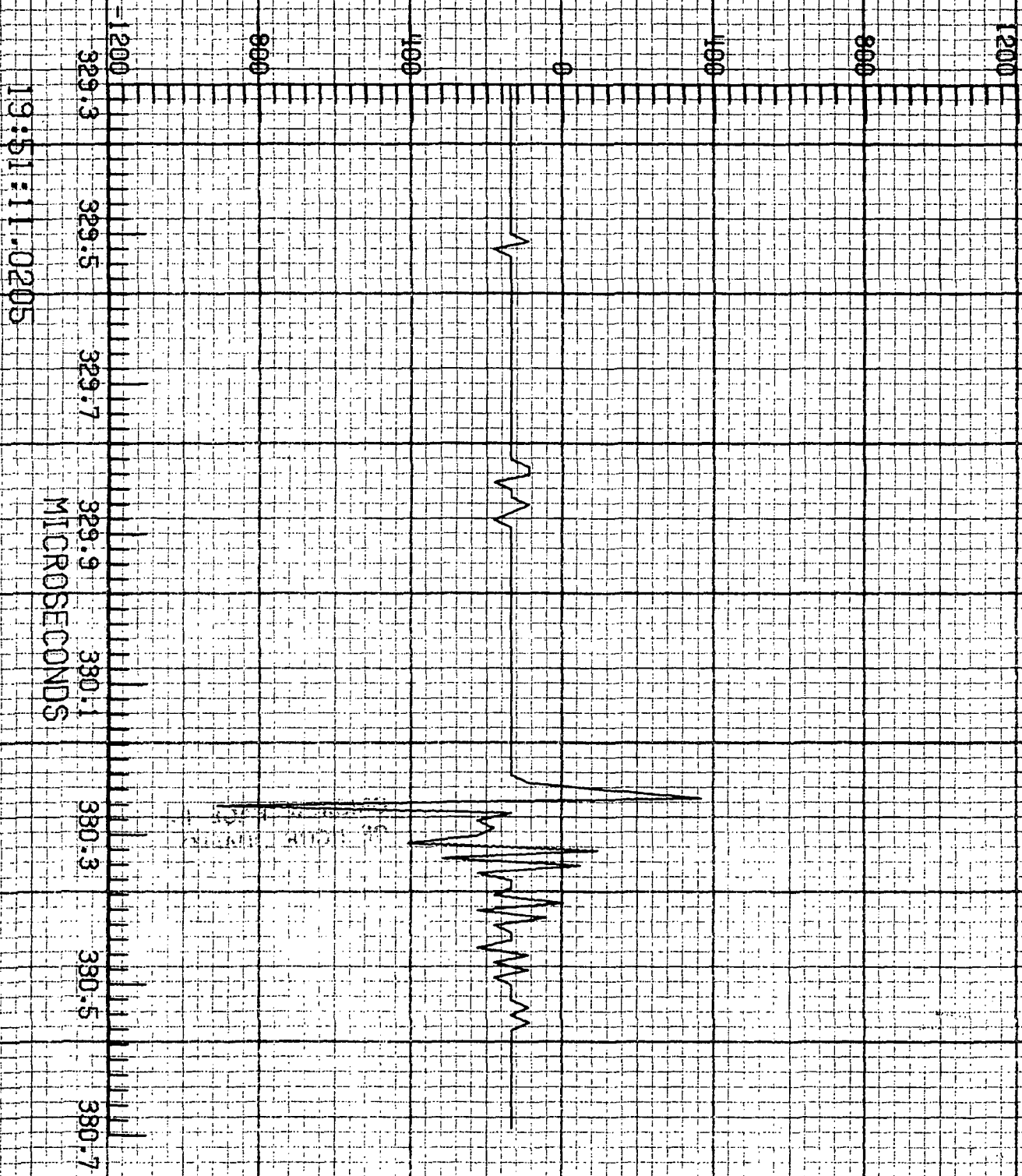
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TEST NO. 83-036

RUN NO. 15

N-010

B DOT 1 T/S





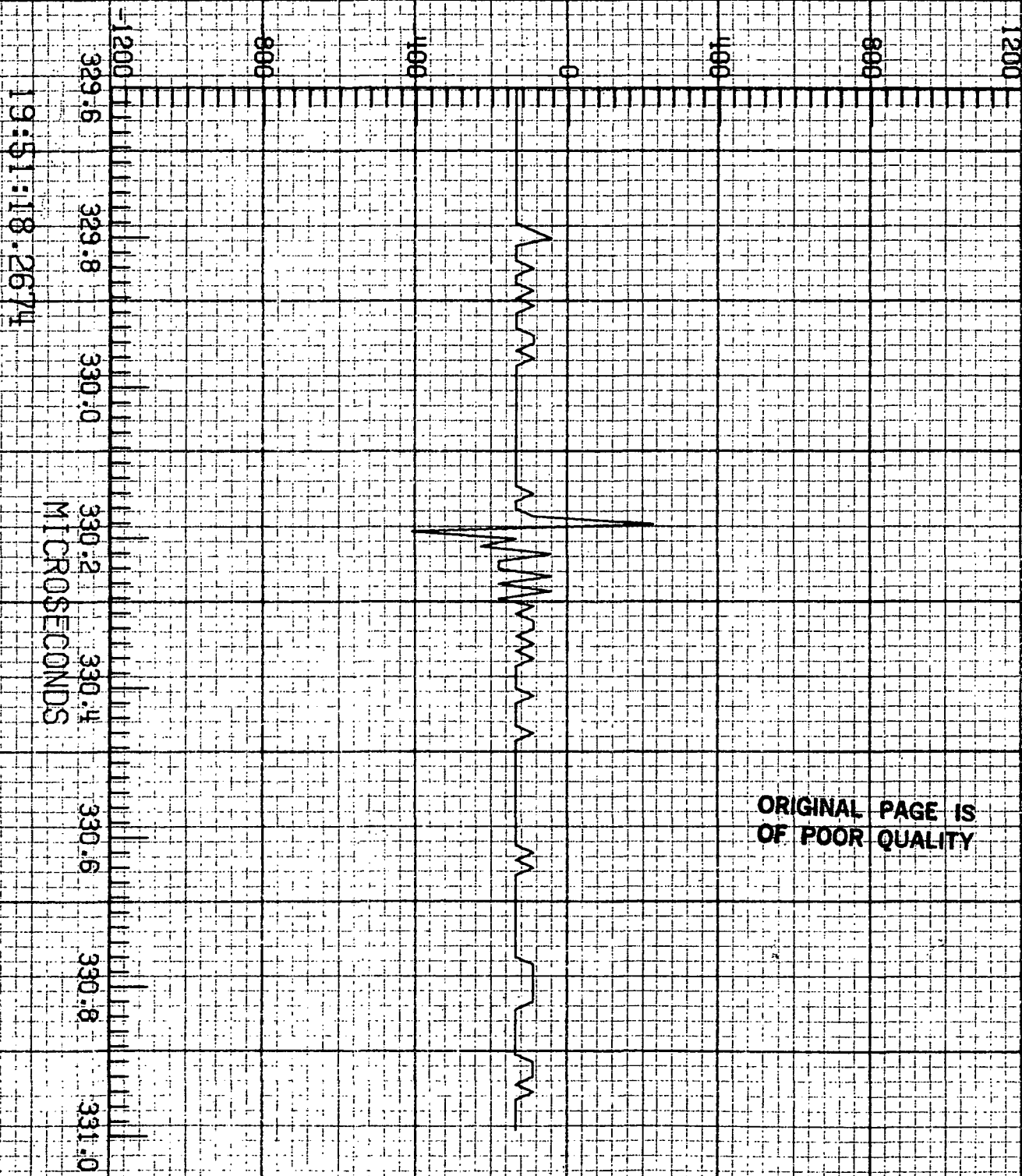
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TEST NO. 83-036

RUN NO. 16

N-011

B DOT L T/S



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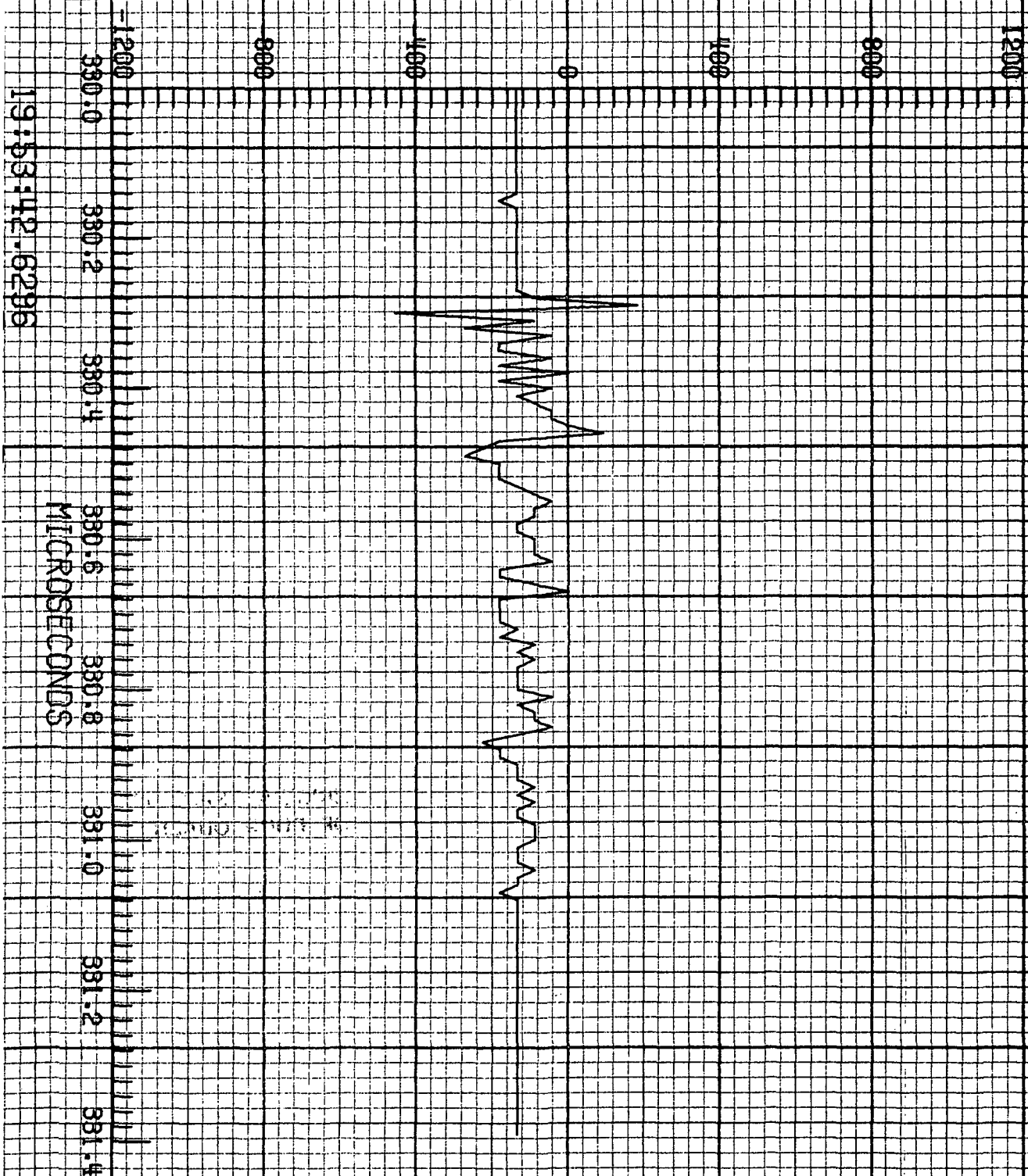
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TEST NO. 83-036

RUN NO. 17

N-012

B DOT II T/S





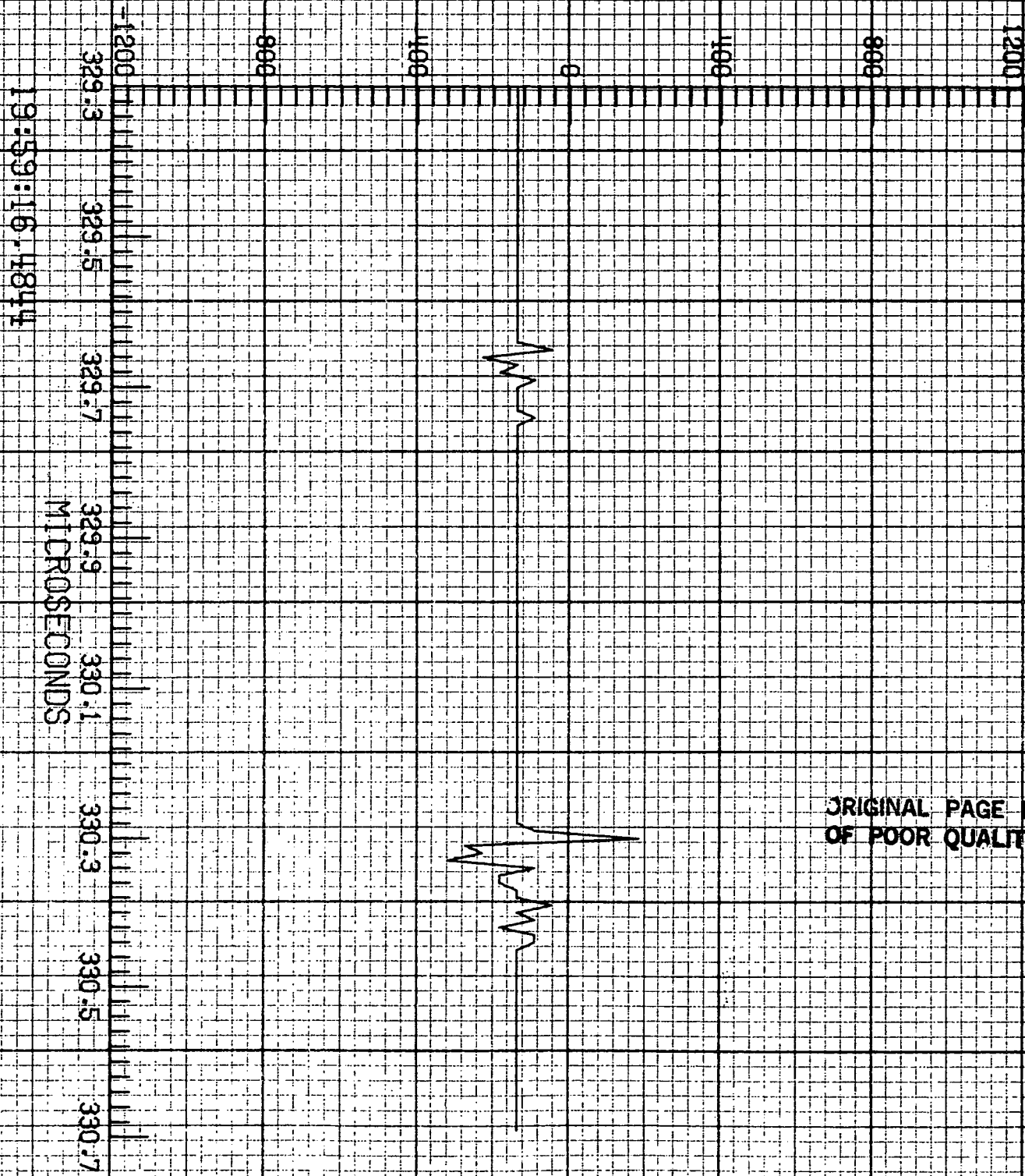
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TEST NO. 83-036

RUN NO. 18

N-013

B DOT L I/S



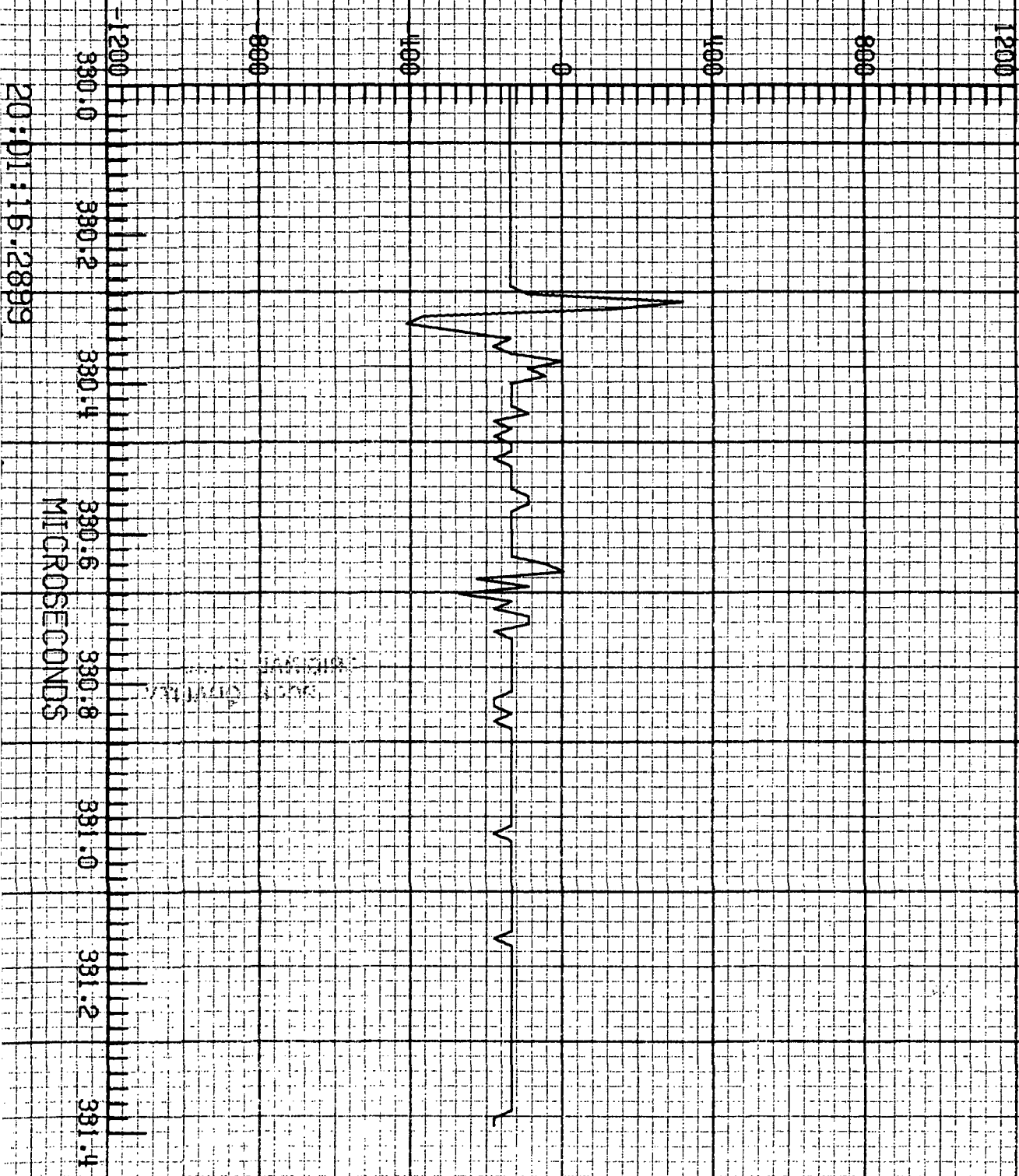
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F106 LIGHTNING/TK 10/M.THOMAS  
RUN NO. 19 N-014

TEST NO. 83-036

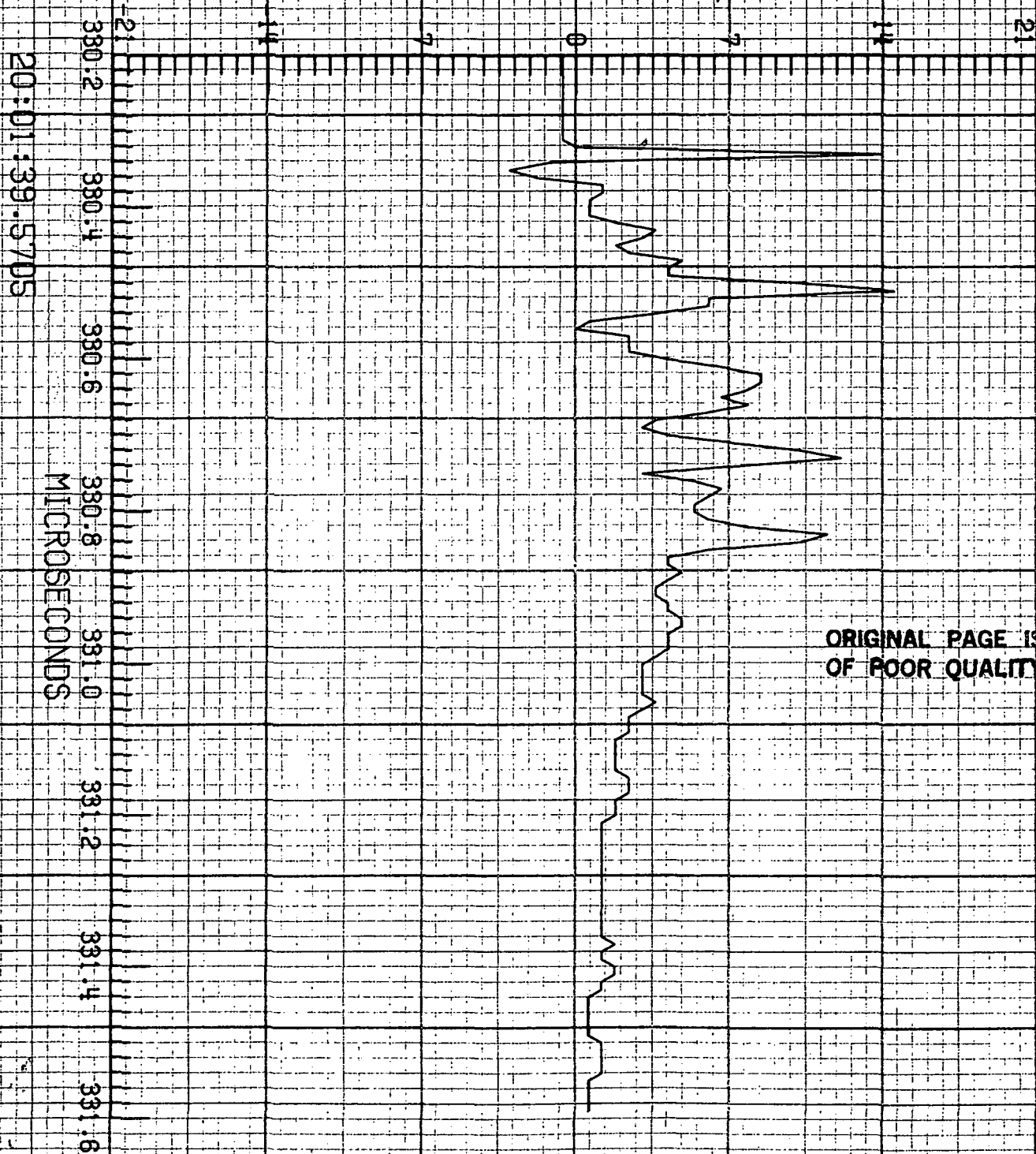
B DOT II I/S



F106 LIGHTNING/TK 8/M.THOMAS  
RUN NO. 20 S-010

TEST NO. 83-036

D DOT FWD  $A/m^2$



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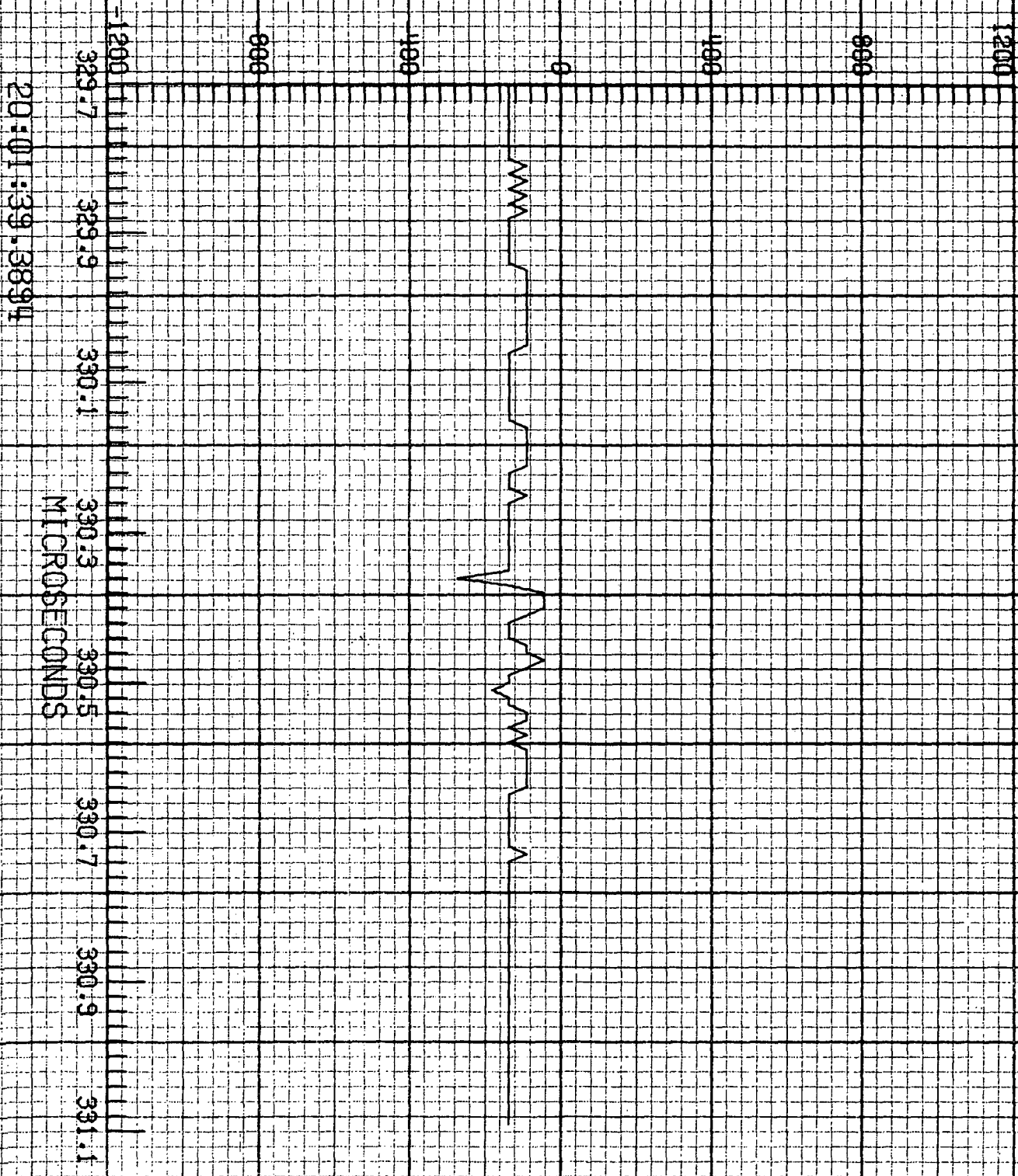
F106 LIGHTNING/TK 10/M.THOMAS

TEST NO. 83-036

RUN NO. 20

S-010

B DOT L T/S



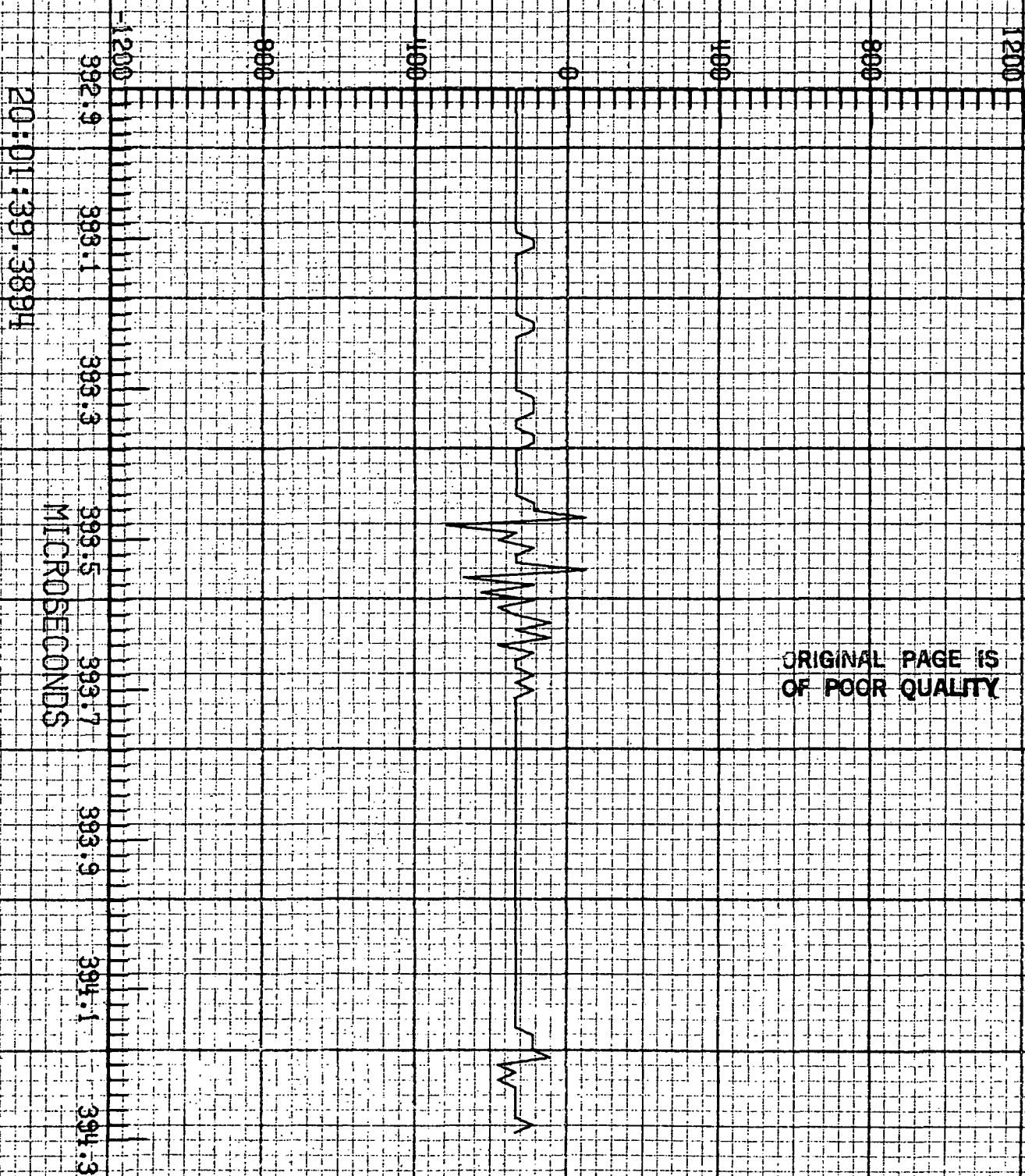
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TEST NO. 83-036

RUN NO. 20

S-010

B DOT L T/S



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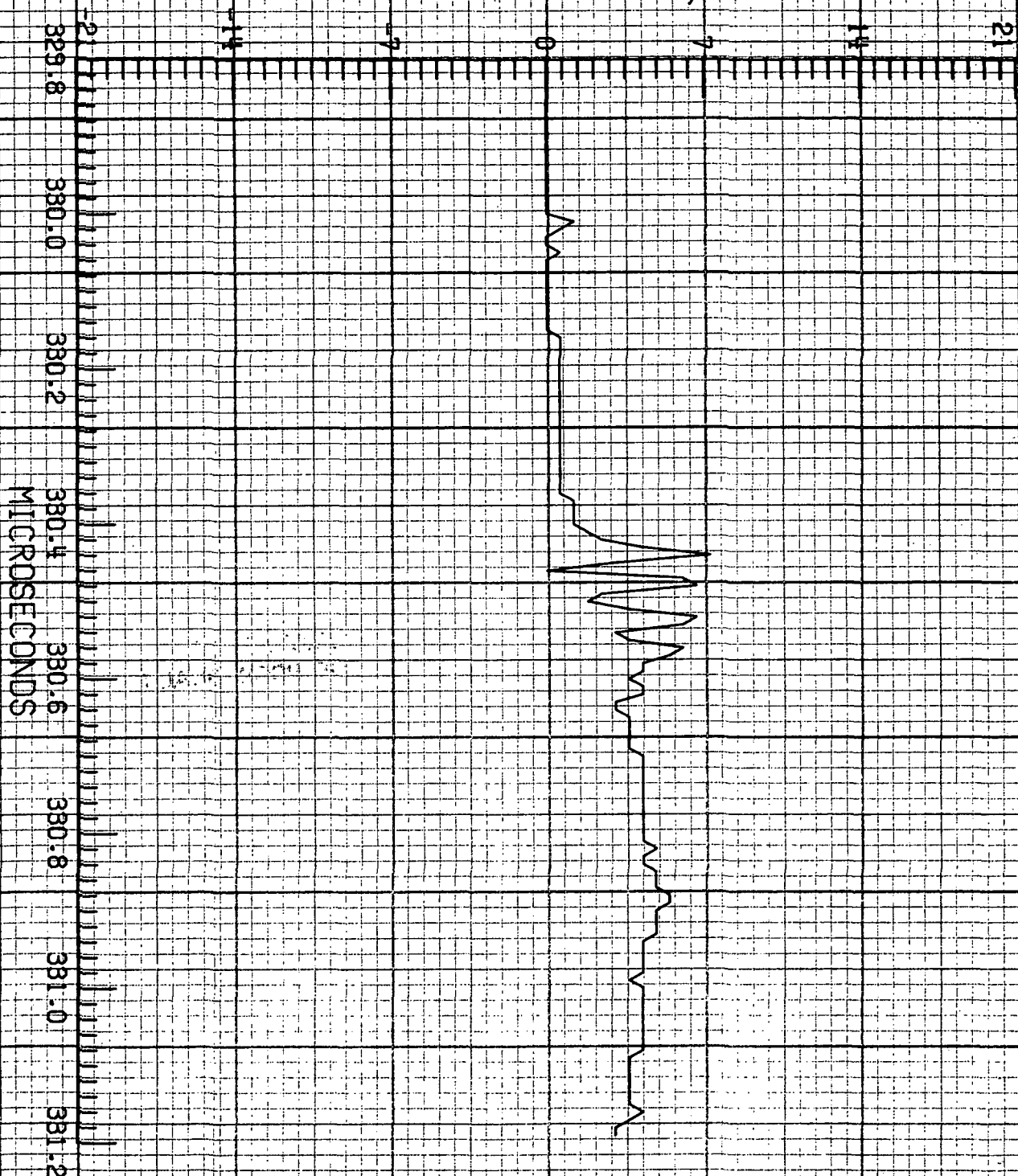
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F106 LIGHTNING/TK 8/M.THOMAS  
RUN NO. 21 S-011

TEST NO. 83-036

D DOT FWD  $A/m^2$

20:01:45.3096



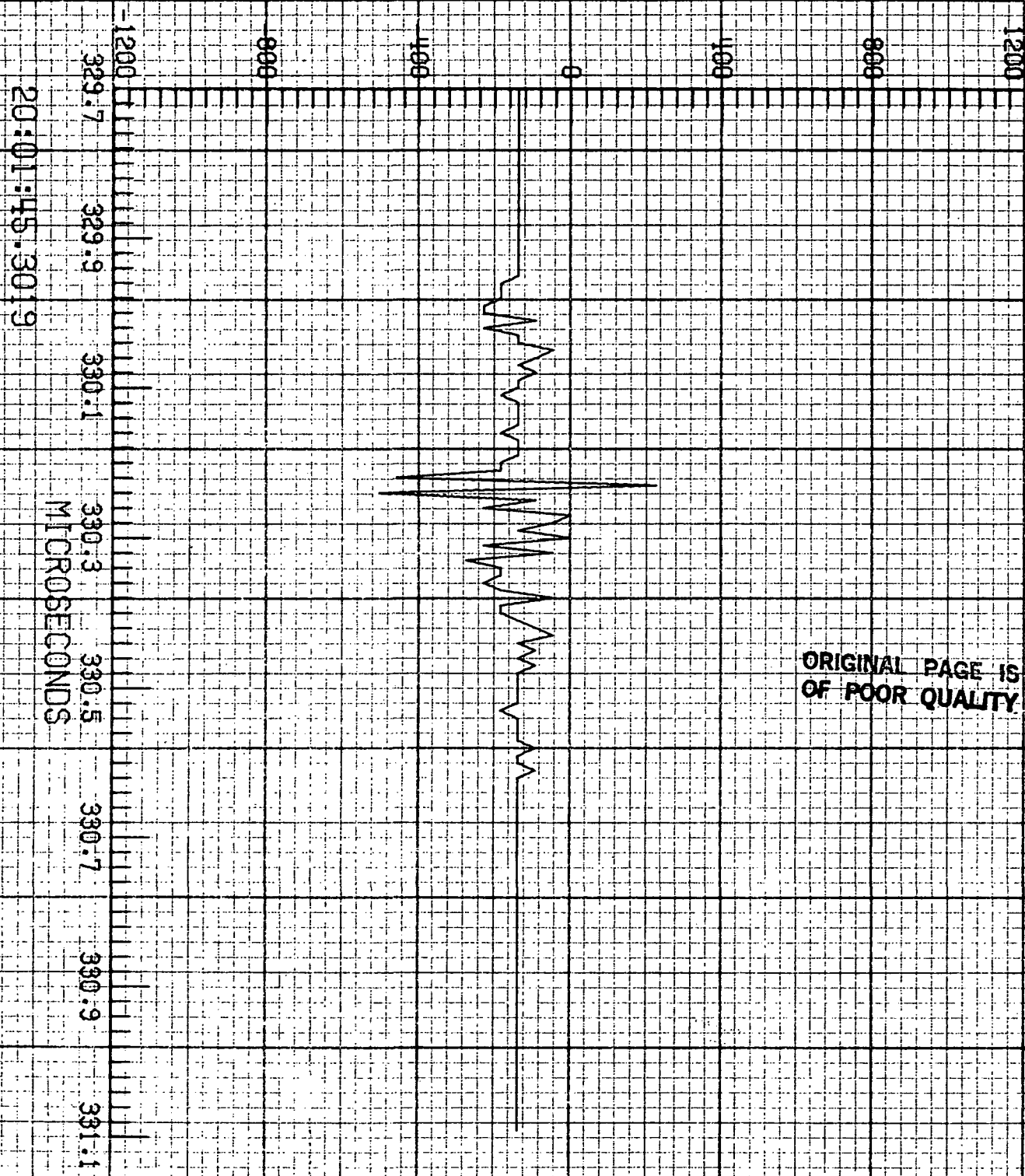
F106 LIGHTNING/TK 10/M. THOMAS

TEST NO. 83-036

RUN NO. 21

S-011

B DOT L T/S



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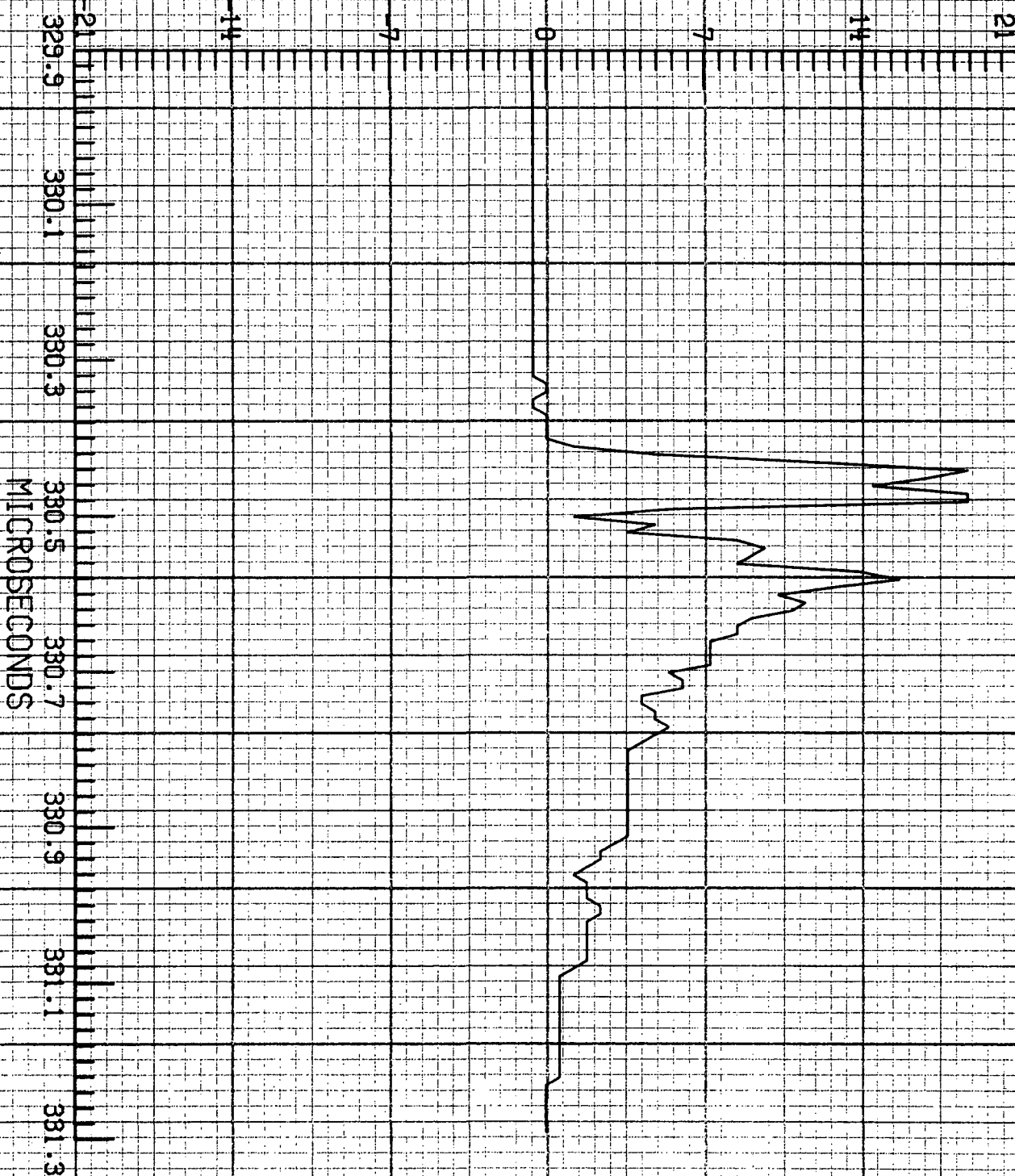
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F106 LIGHTNING/TK 8/M.THOMAS  
RUN NO. 22 S-012

TEST NO. 83-036

D DOT FWD  $A/m^2$

20:02:07.8603



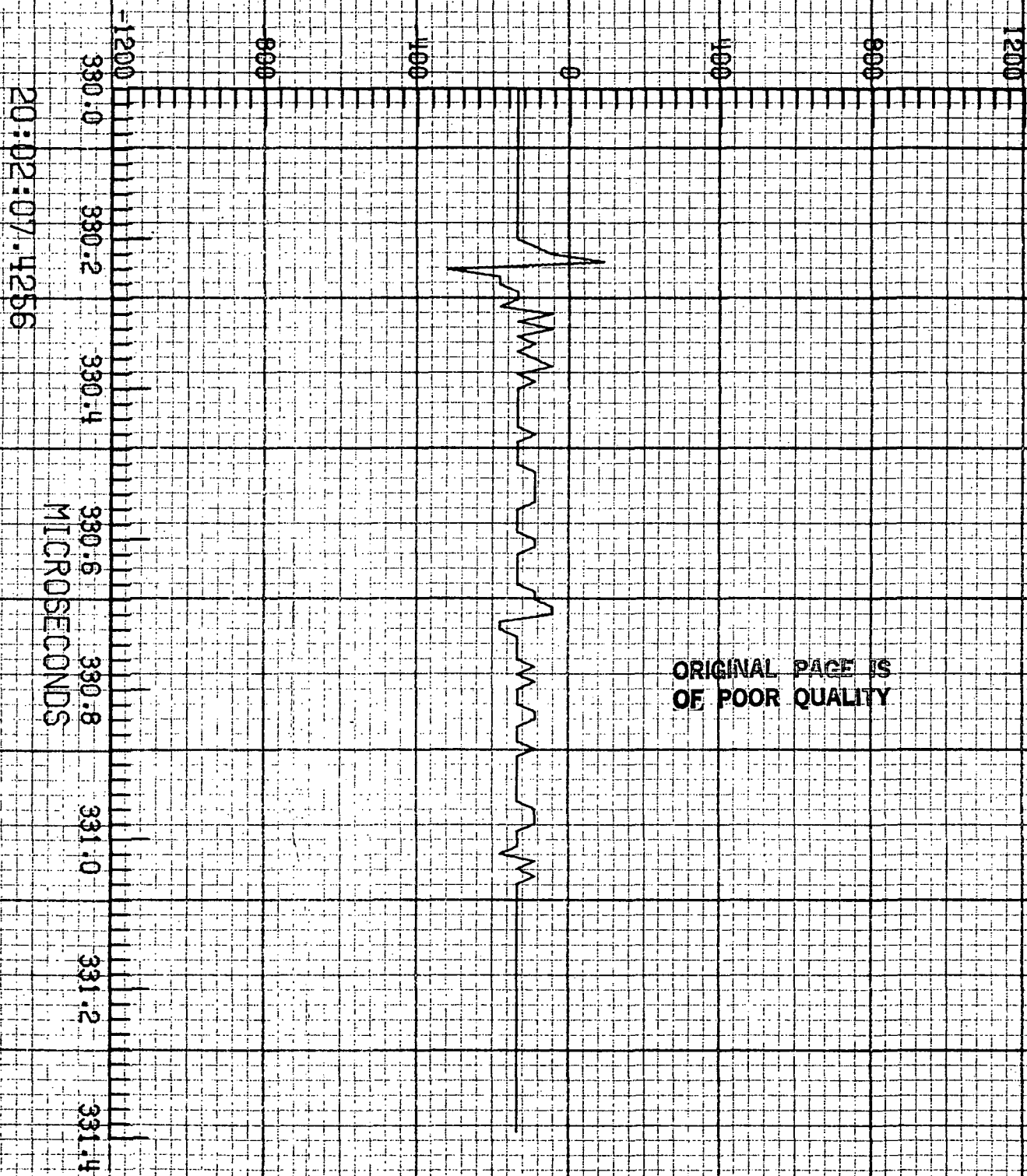
F106 LIGHTNING/TK 10/M.THOMAS

TEST NO. 83-036

RUN NO. 22

S-012

B DOT I T/S



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7. Author(s) Mitchel E. Thomas				8. Performing Organization Report No.	
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16. Abstract  Data waveforms are presented which were obtained during the 1983 direct-strike lightning tests utilizing the NASA F106-B aircraft specially instrumented for lightning electromagnetic measurements. The aircraft was operated in the vicinity of the NASA Langley Research Center, Hampton, Virginia, in a thunderstorm environment to elicit strikes. Electromagnetic field data and conduction currents on the aircraft were recorded for attached lightning.					
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